ARCHIVES

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THE CYCLE.

VOL. I. WEDNESDAY, JUNE 25, 1879. NO. 1.

Published by Aleph Chapter of the Δ. Θ. Χ. Fraternity.

PROGRAMME OF EXERCISES

For the Ninth Graduation Anniversary, June 23, 24 and 25, 1879.

MONDAY, June 23.—Farnsworth Prize Declamations, in Amherst College Hall, at 8 P. M.

TUESDAY, June 24.—Alumni meeting, in the College chapel, at 8.30 A. M.

Examination of candidates for admission to College, in the Botanic Museum, at 9 A. M. and 2 P. M.

Public Examination of Graduating Class in Agriculture, for the Grinnell Prizes, in the Agricultural College Hall, at 10 A. M.

Public Oration before the Δ. Θ. Χ. Fraternity, by James H. Webb, Esq., '73, of New Haven, Ct. Subject, "Practical Scholarship". At 2 P. M.

WEDNESDAY, June 25.—Review of the Battalion of Cadets, by His Excellency, the Governor, on the Parade Ground, at 10.30 A. M.

Graduation Exercises, in Amherst College Hall, at 2.30 P. M.

Theses, by Members of the Graduating Class.

Presentation of Diplomas, by His Honor, LT. GOV. LONG.

EDITORIAL.

In presenting to the public the first number of THE CYCLE, we have few remarks to make and no apology to offer. No such augury shall accompany the introduction of a paper, the success of which is fraught with interest to so many, and from which we hope so much. If we depart from the time-sanctioned custom of heralding the advent of a new publication with a wordy prospectus, it is because we have private reasons for so doing, and not that we deliberately intend to slight our readers by depriving them of an opportunity for fault-finding if we fail to attain the goal established in advance. Though our venture is published under the auspices of a secret society it is our aim to make it not only the exponent of our fraternity, but a truly representative organ of our college. Between these organizations there is no antagonism; on the contrary, both are striving, each in its own way, for the accomplishment of the same great end. Their cause is common, though each has interests peculiar to itself. It is our desire that THE CYCLE shall become the plane on which these interests shall meet; the standard to be borne between them, as they march side by side to victory. We are well aware that the sphere we have chosen is one entirely our own, and that our task is one involving no little difficulty; but, believing that there is a demand for our labors, we enter upon them determined to succeed, knowing that our undertaking has the cordial support of those whose opinions we most respect. We recognize along our path, here and there, a blaze made by a friendly hand; and are thereby encouraged, knowing that THE CYCLE is the center of a lasting interest, and that to its success many a heart is pledged. We therefore announce that we have come to stay, and that the appearance of this paper is henceforth to be one of the events of commencement day. There is a demand for the publication of an annual, in which the exercises of commencement week may be preserved; and if our paper had no other object, and contained no other material, it would supply a want long felt, and would be welcomed by all friends of the M. A. C. as a publication destined to work much good for the college to which we are all so firmly attached. The only publication which ever, in any degree, attempted to fill the niche chosen by us, failed for want of interest—and financial support on the part of students. Such a fate can never be ours, for both these requisites to success are assured from our very associations. Ours is therefore, in many respects a peculiarly happy lot, upon the

duties of which we enter with no forebodings for the future, knowing that there are those who approve of our course, of whose support we are sure, and among whom the results of our efforts are certain of a welcome THE CYCLE is intended to unite for the common weal the elements which go to make up the intellectual and social life of the college, to aid in every possible manner the accomplishment of the objects for which she was created, and to draw more securely the ties which bind us to the institution of our choice. And, though an undergraduate undertaking, we desire that our columns shall serve as the medium for communications between student and alumni. The field we have selected is a broad one, and lies wholly unworked before us; in it no furrows have yet been turned. To cultivate this field to the credit of our fraternity and alma mater, is the acme of our editorial ambition.

Intercollegiate contests of different kinds, though decried by many are nevertheless productive of much good, especially when conducted like the recent rifle matches between our college, Union, and Alleghany University of Pennsylvania. It has been several years since the M. A. C. was last heard from in contests of a similar character, but the glory won at Ingleside has not yet departed. Strife between different institutions, if not carried too far, tends to stimulate a healthy rivalry, from which no harm can come. It leads to pleasant intercourse between the student participants, and to an exchange of thought very beneficial. The colleges learn to remember the fact that they are engaged in the same undertaking, and are indeed sister institutions, and each respects its honorable adversary. We welcome, then, the effort being made by our team to arrange matches with other college teams, and may the laurels achieved by Aggies with the oar be added to by Aggies with the rifle.

There have long been rumors afloat to the effect that the office of secretary of the State Board of Agriculture was before long to become vacant, and, since the election of Mr. Flint to the presidency of the college, the rumors are likely to result in fact. In the event of Mr. Flint's resignation, the selection of his successor becomes of vast importance to the farmers of the old Bay State, which is now maintaining, as it were, two departments of agriculture, one at Boston, the other at Amherst. There is a growing feeling that the Agricultural college should be the agricultural headquarters for the state. The individuals who hold this view would naturally look to the college to furnish the new secretary of the board. And to them we suggest the name of Mr. Chas. Wellington, '73, as a gentleman preeminently qualified for the position, having the qualifications given by a thorough scientific and agricultural education, enhanced by careful culture, an intimate acquaintance with the needs of Massachusetts farmers, and a perfect sympathy with them and their pursuit. After graduation, Mr. W. spent three years with Dr. Goessmann, in the study of agricultural chemistry. He was then engaged to perform the chemical work for the agricultural department of the centennial exhibition, on the completion of which he spent a year in special study at the University of Virginia, and was then immediately offered the position of chief assistant chemist in the United States agricultural department at Washington, which office he still holds. We believe it will be hard to find a man better qualified for the secretaryship than he, and would consider the board fortunate indeed could they secure Mr. Wellington's services, should a new secretary become a necessity.

Among a certain class of individuals fault is frequently found and dissatisfaction expressed that not more of the graduates of the M. A. C. adopt agriculture as their profession. The expression arises from ignorance as to both the objects of the college and the vocations of its alumni. And we will endeavor in a few words to correct these erroneous ideas. First, the college was never intended to educate farmers alone; agriculture is not the only thing taught at the "college of agriculture". The institution was established by congress for the purpose of "educating young men in agriculture and the industrial sciences"; in fact the word agriculture occurs but once in the original act of incorporation. It therefore appears that the prime object of the college is not to make farmers, but to make *men*; to give such a practical and scientific education as shall make good citizens. Yet, to carry out the designs of the institution, all sciences are taught with a direct view of their application to agriculture, and the latter is placed, not on a par with other professions, but far

ahead of them, as "the art of arts, without which the earth is a wilderness and man a savage". But the students are not necessarily expected to become farmers; each is expected to follow the dictates of his reason and inclination in the selection of an occupation; and about twenty-five per cent. enter upon agriculture as a life pursuit soon after graduating. The number would be larger were it not for the fact that, unlike many professions, agriculture requires ready capital, which so few young men possess, and therefore many an alumnus of the M. A. C. is obliged for a while to neglect the voeation of his choice, till in some other business he has obtained the means for embarking in the occupation toward which his tastes and education incline him.

Within two months the college has passed through an important experience; it has lost a president endeared to us by long years of service in our behalf and that of Alma Mater, and has gained one, a stranger, except by reputation, to us, and we fear a stranger to the needs of the institution over which he is called upon to preside. Our connection with the M. A. C. has been such as to give us a good insight into its objects, requirements, and possibilities; and we have clear ideas concerning the qualifications necessary to a president who shall guide it to its most perfect development. And it is no disparagement to Secretary Flint's known abilities, if we believe he has not the needed requisites to the highest success of the college; we may be mistaken, but as we see it, these should be the characteristics of the president of the institution. He should be a man in the full vigor of his powers and usefulness, with a large educational experience. He should bring to the college a wide reputation, to which he is still adding. He should be thoroughly imbued with the spirit to which the college owes its existence, and in the carrying out of which its greatest usefulness lies. He should be a teacher, competent to fill a professorship in an exceptionally able manner. That the new president possesses some of these qualifications in a marked degree, is well known, but that he is lacking in others equally important can not be denied. Were he a younger man, or one who gave evidence of willingness to work up to the position, his advent would be hailed with joy, but his work was finished and his reputation gained years ago. We do not claim that the institution has taken a long step backward, but it has not taken the step forward we would like to chronicle.

We were always considered good at guessing conundrums, and never, no never, were obliged to "give up"; but at last we acknowledge that we are completely nonplused. In vain have we raked the editorial brain in our endeavor to account for some of the recent "official" actions of our trustees. And among them the sale of a large portion of the fine herd of cattle belonging to the college is perhaps the most incomprehensible. We are told that the action was taken to obtain needed funds, and as a necessary step toward reducing the running expenses of the college, but even as an act of economy is it likely to succeed? The books of the college treasurer show that for several years the stock has been the most profitable property of the farm. But aside from this is the fact for which we most deeply regret the sale. The stock of an agricultural college is a part of its illustrative educational apparatus, no more to be parted with than the physical apparatus, or the geological and zoological collections; and to carry out the object for which the cattle were chiefly kept, more than one breed is necessary. Jerseys will no more illustrate the principles of beef production, than a dried plant in the Knowlton herbarium will demonstrate a physiological fact. All three breeds were therefore essential to the highest success of the institution; and in depriving us of two of them the trustees have materially lessened our educational facilities. Even if a reduction in the number of animals kept was necessary, it might have been equally distributed between the two principal breeds, and thus practically one great cause for complaint would have been removed. Were it as necessary to part with the stock as the trustees themselves claim, and we fully understand the exigencies of the case, we believe that far higher prices might have been realized by a little judicious management. As it was, the twenty-five animals sold were sacrificed at half their value. Among the fanciers of breeds different from the one retained at the farm, and among farmers desirous of improving their herds, this action receives deserved condemnation, and will have a tendency to create enemies in the ranks of those from whom our staunchest friends should come.

ORATION

Delivered Before the First General Convention of the Δ. Θ. Χ. Fraternity, June 24th, 1879.

BY JAMES H. WEBB, '73.

MR. PRESIDENT AND BRETHREN OF Δ. Θ. Χ.:—When I received from your committee the invitation to address this convention of our fraternity, I found that an accumulation of the responsibilities of the busy world was making sad havoc of many of the fondest recollections and warmest friendships of my life. And although the memory of the happy days, now long past, can never be effaced or obliterated from my heart, yet as time wears on, and as the cares and conflicts of life come thicker and faster, I find that the associations of college days seem to me more and more like a delightful dream of my youth. Yet they were once pleasant realities, and as I stand here today surrounded by many familiar faces and by brethren to whom I am glad to be bound by the mystic ties of a beloved fraternity, it seems to me but yesterday that I left my "old college home" and launched forth into the dusty arena of active life.

We have looked forward to this anniversary of our society with the brightest anticipation, and it is with joy and gladness that we return to her again to renew and strengthen the fraternal cords which bind us to each other's welfare, and rekindle within our breasts the memories of other days. Our society has ever been devoted to the interests of true scholarship, and has done much to stimulate the intellectual activity of her members and give symmetry and method to their acquirements. I have therefore thought it appropriate to present to you a few considerations concerning the most essential features of the Practical Scholarship which is best adapted to the needs of the present day.

PRACTICAL SCHOLARSHIP.

The age in which we live is chiefly remarkable for brilliant discoveries and wonderful progress in the field of practical science. The minds of men, stimulated by the discovery of the useful application of steam and electricity, and the revolutions they have wrought in our domestic economy, are absorbed and incessantly occupied in seeking out some new thing. With crucible and battery, with telescope and compass, and with all the ingenious contrivances peculiar to this inventive age, the indefatigable men of science, sustained by a most ardent enthusiasm, are rapidly solving questions long shrouded in mystery and doubt.

This new intellectual activity has wonderfully affected the tendency of modern thought, and is exerting a most important influence upon the scholarship of the times. Science has become popular and affords a most fruitful theme for the sermon, the lecture and the novel. Our newspapers and periodicals are filled with its discussions, society delights to converse about it, and everywhere it is acknowledged as the mainspring of all our industries and the mighty benefactor of our race. Although our colleges have been slow in learning that it is their business to fit young men for the discharge of the practical duties of life, yet in nearly all of them—at the present time—scientific instruction has developed into a most important and indispensable department.

The college senior of twenty years ago thought himself a prodigy of learning when he could read the New Testament from the original Greek, and had absorbed all that his ecclesiastical professors could impart concerning "Paley's Natural Theology" and "Edwards on the Will". And so for years men have come forth from our colleges profound in the mysteries of Calvinistic theology, or proud of their skill in construing difficult passages from the Grecian dramatists; but deplorably ignorant of history, even that of their own country, equally deficient in the important field of political economy, and as utterly unacquainted with even the most rudimentary principles of the practical sciences as the North American savage, or the Zulu of South Africa.

But clergymen have long ceased to monopolize the learning of the times, and the large proportion of college graduates who formerly entered that profession has very considerably diminished.

This lamentable ignorance of young graduates in the branches I have named, as well as in the great matters pertaining to constitutional government, has until quite recently been a subject of general comment and earnest solicitude. And it was so, that if by chance a student attained proficiency in any of them it was generally the result of a prudent outside reading and not the excellence of his college curriculum.

But in our land of popular government, where the sovereignty of the State is lodged in the great body

of the people, and where the individual is such an important factor in the government machine, it is a matter of the utmost importance that our young men, as they come forth fresh with baccalaureate honors to assume the grave responsibilities of American citizenship, should be thoroughly informed concerning the history of their country, and have some definite and correct ideas of the origin and development of our political institutions. Some indeed have not blushed to confess their ignorance of these matters, and have sought to base their claims to scholarship upon their skill in composing Latin verses or their familiarity with the amours and adventures of the divinities of classical mythology.

But such a dilettante scholarship is not what America demands. We need men to grapple with our material resources and to develop and superintend those great industries which require not only the keen instincts of the prudent man of business, but also the experience and accomplishments of the scientist and scholar. It is moreover the privilege and the duty of those who have had the advantages of educational training and discipline, to interest themselves in the public measures of the day and be ever ready to devote their resources to the public welfare. From this class are to come our men of affairs, who shall be posted in matters relating to the public finance, and be able to comprehend those novel and perplexing questions of government which our peculiar system of independent sovereignties so often propounds.

Unfortunately, it has become fashionable of late years for men of scholarly attainments to hold themselves aloof from public affairs, and, with the plea that "politics are not respectable", leave to ignorant and often knavish men the high responsibilities of government. And so it frequently happens that irresponsible and unprincipled bummers become mighty in political influence and hold important offices in the state. And such men as the notorious orator of the San Francisco sand lots, who I believe is not unknown to the citizens of Massachusetts, create a great hubbub in the community, and draw away much people after them.

The tendency of the past twenty years has been to make scholarship practical. And while our colleges —very properly—continue to teach those branches which give to learning its elegance and grace, yet they also impart to students knowledge which shall serve them in the practical everyday affairs of life. More prominence is now given to history, political economy and the natural sciences. Post-graduate courses have been established, affording to ambitious students an opportunity to pursue particular branches in more careful detail. And, lastly, we have our special technical schools, where students are taught exclusively in matters relating to particular industries and pursuits.

These schools are doing a very important work and are of great value to society; but it should ever be remembered that any special course of study alone can never result in high scholarship nor afford that broad intellectual culture which will avail one in every department of life, and give him distinction above his fellows. One who is only a specialist, be his knowledge ever so profound, and his department ever so important, is not fully qualified to discharge the highest duties to society or to himself. His investigations may be of the greatest public value, yet if his knowledge does not extend beyond his specialty, and comprehend those general branches of learning which comprise a liberal education, he must be considered as only a specialist, and wanting in the requirements of true scholarship. I do not deny that it is the duty of the student to devote his highest energies to those subjects for which his talent and circumstances have fitted him, and to be ambitious to excel in some particular branch of knowledge. But he can only hope to attain the highest success by building upon the solid foundation of a broad, liberal education. One who attempts to dabble in any branch of science without first fitting himself by faithful and conscientious work in the field of general knowledge can hope for but poor success. His conclusions will be hasty, his powers of observation undeveloped, his judgment erroneous, and his efforts vain. He will perceive that a lack of proper mental discipline impedes him on every hand, and keeps him continually floundering in darkness and difficulty. If by the aid of good natural faculties and the hardest kind of work he is so fortunate as to become famous in his specialty, he is, after all, but a man of one idea, narrow in his views, conceited in his knowledge, devoid of all other learning; an intellectual monstrosity, uncomfortable and out of place save in his own particular sphere.

I do not question the value or utility of special courses of study, nor attempt to criticise or suggest

concerning them. Yet they are by no means the all-important features of our educational machinery, and the student must properly qualify himself by diligent application to general learning before he can fully appreciate and avail himself of the advantages of special study.

Among the many topics comprised in the curriculum of our collegiate institutions there are those which are of particular importance and deserve to be diligently cultivated. They are history—and especially constitutional history—political and social science, and the great field of practical and applied science. Proficiency in these several departments should be the criterion of American scholarship. They are the subjects most intimately related to a wise administration of government, and materially affect the health, wealth and happiness of our people. To these great subjects much of our other learning is tributary and chiefly to be esteemed for its practical relation to them as aids to their more thorough development. The study of history broadens our minds, conquers our prejudices, and awakens within us the profoundest conceptions of man in his strength, his virtue and his power. We see also the base qualities of his nature, and learn of his weakness, his cruelty and his vice; and we are impressed with the fact that in all ages of the world, in all conditions of civilization, he is ever the same, subject to the same passions, pleased with the same baubles, and conquered by the same temptations. We learn that civilization is not a quality of human society peculiar to the nineteenth century, but that, in the remotest ages of antiquity, philosophy, literature and the arts flourished as they have never flourished since. We read of great cities, wonderful in the lavish display of wealth and luxury; of states established upon wise and salutary principles of government, and as far back as 2,000 years ago we find the origin of a great civil code which is today the foundation of the law of all continental Europe.

We learn also of the subtile causes which have resulted in the downfall and ruin of nations, and of the inevitable consequences of a corruption of public morals, of luxurious indulgence and of breach of public faith.

In every age we see noble examples of heroic resistance to tyranny and aggression, and a never-ending struggle for liberty and constitutional government.

When kings and nobles have abandoned themselves to unbridled indulgence and have regarded their subjects simply as instruments to gratify their selfish desires; when by unjust and liscriminating taxation they have sapped the very life blood of the people and ground them to the dust in wretchedness and misery; then it is that the people, so long regarded as vermin of the earth, have risen in their might and, actuated by the fury of beasts, they have come to reap a terrible and bloody revenge. Violence and anarchy rage for a time as a mighty pestilence. The palaces of the great are leveled to the dust. Beautiful cities are scourged with fire and sword; costly works of art, the result of years of patient toil and of vast expenditure of treasure, are swept away by a single breath; and even innocence and virtue are not spared from the indiscriminate fury of vengeance. The great, awakened from a dream of long sensual indulgence, fly for their lives to distant lands or, dazed and stupefied at the sight of the hideous demon they have aroused, ignominiously give their forfeit to the headsman. The cries of liberty, equality, fraternity, or death, resound on every hand, and I have but to point you to the unhappy experience of France for the rest.

Sad and deplorable as these outbursts of injured humanity have ever been they are but the inevitable results of long continued injustice and tyranny; and have been necessary to teach men the plain, simple lesson that the object of civil government is not to enrich and aggrandize the few, but to seek the highest prosperity and happiness of the great body of the people. We learn that above the din and turmoi lof human conflict there is "One above sways the harmonious mysteries of the world" even better than prime ministers; that every wanton invasion of human right will surely be avenged; and that from the smoke and carnage of revolution and anarchy the great King of Kings causes to blossom forth a ripe fruition of human liberty and prosperity.

By a proper comprehension of the great lessons of history, wise statesmen are taught to exercise that caution in the administration of government which has been called "the child of experience and the parent of national safety".

In our land of popular government, where every man has a share of responsibility in shaping the destinies of the nation, it is especially desirable that our men of learning should be thoroughly grounded in

historical knowledge and be thereby enabled to judge of the tendency of present events in the light of the experience of the past.

For the same reason a knowledge of our constitution and its history is also most important.

To be sure, there are many garrulous old gentlemen profound in newspaper literature, and pothouse politicians who have gathered a little information from the stump, who harangue learnedly about the constitutionality of various measures, and would have you believe them mighty in political knowledge.

But the constitution or our country is an instrument presenting to the disciplined mind a field for the most diligent study and the profoundest thought; and the scholar should not take his information concerning it from the sources I have indicated. Its application to our union of free and independent states gives rise to many perplexing and difficult questions. We live under the jurisdiction of two distinct systems of law, the federal and the state, each having its own courts and peculiar modes of procedure. For the remedy of certain grievances we must resort to one, for certain other remedies to the other, and under some circumstances we can resort to either at our choice. There is no end to the complication which this apparent conflict of authority engenders, and to a foreigner our system is well nigh incomprehensible. A man pays the federal government twenty-five dollars for a license to sell intoxicating liquors, and the state of Massachusetts passes a prohibitory law and prosecutes him if he does sell.

For defence against foreign enemies we have the federal army and the state militia, each independent of the other and commissioned from different sources. The various uses to which the federal army can be put, and the extent to which the general government has a right to intermeddle with the affairs of a state, are among the most important of constitutional questions and the great political issue of the hour. Republicans claim that the president has a right to use the federal army to preserve the peace within the borders of a state and to prevent the intimidation of voters, and that the general government can supervise elections and prevent illegal voting and fraud. They tell us that the doctrine of state rights is an abominable heresy pregnant with mischief; and endorse all measures tending toward a strong government and central power. They claim that it is the business of the federal government to exercise a vigilant supervision over the states, or else, like wayward children they will play hookey and get into all kinds of difficulties. The democrats, on the other hand, claim that these propositions are insulting to the honor and integrity of the state, and presume an imbecility of local authority which does not exist; that they strike heavy blows at the fundamental principles of our Union, which leave the state supreme in the management of her own affairs, save as to those matters which she has expressly granted to the general government, and that she has granted only those powers which are particularly set forth in the federal constitution or are contained therein by necessary implication. They loudly insist that if our forefathers had imagined that the constitution when presented to the states gave the executive the right to send federal troops to meddle in their affairs, save only at the call of the governor to quell a formidable insurrection, it never would have been ratified. For they claim that this power in the hands of a corrupt and ambitious administration can be used to reduce the states to the condition of mere provinces, and to effectually destroy their character as free and independent sovereignties. Statesmen of profound learning and undoubted patriotism have held widely different views on this most vital question, and it is safe to say that in some form or other the conflict between state rights and national supremacy will ever be an important political issue.

This difference of opinion concerning grave constitutional questions shows the importance of diligent study in this field, and the necessity that our men of learning and scholarship should be governed in their political views by honest, intelligent conviction, and not rely upon their newspaper, or still worse, upon unread politicians, for knowledge of the fundamental organization of their government. Let our institutions of learning give their students some practical instruction in the history of our constitution. Let them study the chain of events which gave it existence, and the writings of the great men who were instrumental in its origin. Let them follow it down through the events of history and note the construction which it has received and the strains to which it has been subjected. If the student would fully comprehend the origin of our political institu-

tions he must extend his study to the mother country, to which we are indebted for our language, our customs and our laws. He will find way back in the thirteenth century, when at Runnymede the people, under the leadership of the powerful barons, wrested the Great Charter from the infamous King John, the same spirit of liberty and yearning for free constitutional government which has ever characterized the Anglo-Saxon race.

Let him watch the great events of the succeeding centuries, observing through religious persecution, political revolutions and frequent acts of despotism, the slow but gradual development of the constitution of England. He will find at last a superb structure of maxim, precedent and law, with Magna Charta as its corner stone; and although unwritten and not embodied in any one formal instrument, yet well ascertained, ample in its scope and well adapted to the wants of a great and mighty people. He will find a government ruling vast colonies far mightier than itself, and marvelous in the harmonious relation of its various departments. The prerogative of the crown, the dignity of the lords, and the rights of the commons, each a check upon the ambition or perfidy of the other, and all appealing to the people as the final arbiter and judge—a triumph of popular government—an honor and blessing to the world. America should not be jealous of England's greatness, although in our infancy she was perhaps a little unkind for a mother and wanted us to hew wood and draw water when we preferred to play with the other boys; nevertheless she is the mother who gave us birth, and we long since punished the old lady by running away from her and setting up an establishment of our own. We have now developed into a full manhood and believe that in the bottom of her heart the old lady is proud of us; so let us forget the flogging she tried to give us years ago and honor and respect her in her dignity and her years. And if in the years to come we should find old England struggling for liberty and constitutional government against tyranny and despotism, let America, like a dutiful son, rally to her support and vindicate with her the heroism and courage of our common ancestors.

Since Adam Smith put forth his great work on the "Wealth of Nations", the subject of political economy has received the attention of the brightest intellects. The flattering progress of the past twenty years has shown this science to be most intimately related to our material prosperity and happiness. It is found that all great social movements are governed by laws as certain and immutable as that of gravity, or the orderly recurrence of the seasons. Although we can not expect that this science will reach that degree of excellence which will enable us to predict beyond a peradventure the inevitable result of every human event, yet it is certain that the great law, that like causes under the same circumstances will ever produce like results, applies with as much authority to the workings of human society as to the vast realm of physical science. With experience and observation the scope of this science will be extended and the stock of definite knowledge increased.

At the present time the great question relating to public finance, the unnatural conflict between capital and labor, and the prevalence of communism and socialism under this branch of learning are of the highest import. Not only should the scholar be well read in these matters but it may be necessary for our common schools to implant in youthful minds a few of the great principles which control human society in order that the state may be insured against the spread of communistic dogmas. If sound, healthy ideas are not presented to the public mind by men profound in this branch of knowledge, it will eagerly seize upon the spurious doctrines of foreign enthusiasts, and the woe and ruin then resulting to our country may far exceed our most direful apprehensions. A large army of unemployed and discontented laborers are always a dangerous element in society. They are always ready to listen to demagogues who grow fat and famous on their misfortunes, and who preach a visionary scheme of universal brotherhood which will give to all men, regardless of personal endeavor, an equal share of earth's bounty. It is not a wise policy to treat this class with supercilious scorn, and gravely tell them that we do not believe that they are ever cold or hungry or wretched, and that they have no good reason for complaint; nor should we shut our eyes to the many ills they have to bear and piously assure them that good bread and pure water are delicacies peculiarly suited to their condition. There is doubtless a great deal of shame in some of their complaints, and their wretchedness is unquestionably largely attributed to their

vices, and yet whatever social science can do toward bettering their condition and increasing their health and happiness will most surely result in the increased prosperity of all classes and the honor and welfare of the nation. Above all, it should be most urgently impressed upon them that the flaunting braggarts who would inflame them to violence, are in reality their worst enemies, and espouse their cause solely for personal aggrandizement. Social problems are among the profoundest matters with which the mind has to deal; and although misery and suffering are perpetually entailed upon us as the result of folly, depravity and vice; yet the scholar who devotes himself to the solution of these questions can do much toward increasing the sum of human happiness and will be justly regarded as a benefactor of his race.

The boundless field of physical science is closely connected with many social questions and most deeply concern our material prosperity. The intimate relations which it has to the various phases of our domestic life demonstrate the importance of its claims to the diligent attention of the scholar. By the aid of its beneficent teachings we ward off the destroying hand of pestilence and economize and render available the sources of all our physical necessities. We harness the mightiest elements of nature and train them to become our docile servants. We solve many of the great mysteries of life and obtain, now and then, what may be faint glimpses of the still greater mysteries beyond. But it is useless for us to say more concerning the practical importance of this great field of knowledge. Our college has done her best to impress this upon us, and has afforded us valuable opportunities for attaining some proficiency in, at least, the fundamental principles. I do not suppose that we have all availed ourselves of these advantages as we might, but for that we must blame only ourselves. But aside from the practical relation which physical science bears to common everyday affairs, the pursuit of scientific knowledge stimulates the highest intellectual activity and unfolds to the student the grandeur of the created universe and the wisdom of its mighty ruler. It is also to be esteemed for the elegance and grace which it gives to scholarship, and the resources which it affords for interesting and instructive conversation; it furnishes a delightful occupation for leisure hours and gives to all nature a charm and interest which can not otherwise be enjoyed. To those bound by the harassing cares and duties of business life it will be found a pleasant relaxation from a weary round of drudgery, and give a healthy tone and action to the mind. It must therefore be allowed that familiarity with this branch of learning should be an important feature of the scholarship best adapted to the wants and tendencies of the present day. I have indicated three great subjects of study to which one of scholarly attainments should diligently apply himself. But it must be remembered that the most that any undergraduate course of instruction can do is to open to the student the gates of the avenues of learning and teach him to take a few initiatory steps. He must then push onward by himself, and by giving his days and nights to unremitting toil he may hope at last to attain distinction and honor and reap the first reward of patient endeavor. But in whatever pursuit of life he may engage, or in whatever direction he may devote his highest energies, he will find the subjects we have been considering well worthy of his most diligent attention, and intensely practical in their relation to the various wants of men.

It has been claimed by some that this honored institution, to which we are all indebted, is or should be a special school, especially devoted to the teaching of agricultural science. Such I think, however, was not the idea of the wise men who were interested in its establishment, or of the professors who have contributed so much to its success, or of the many students who have availed themselves of its advantages. To confute this notion I have only to refer to the act of Congress to which the college owes its existence. Its object, as therein set forth, is "to teach, without excluding other classical and scientific studies, and, including military science and tactics, those branches of learning which relate to agriculture and the mechanic arts; in order to promote liberal practical education in the several pursuits and professions of life". Thus we see that its design is not to teach the sciences relating to agriculture, but also to give the elements of a liberal and practical, education. In other words, it is not simply a college or school of agriculture, but an agricultural college; and such has been the idea from which the institution has developed. It now affords to young men, properly qualified, the means of acquiring a liberal and practical education, and sends them forth to

meet the duties of life with a taste developed for rural affairs, and with much practical knowledge concerning the great principles of science which underlie an intelligent system of agriculture. And scattered through this broad land we shall soon find an ever increasing number of her sons earnestly devoting themselves to their chosen pursuit, and by their learning, their dignity and their skill, winning the respect and esteem of their fellow men. Our beloved college is doing a noble work in developing and fostering the interests of practical scholarship. She is training and sending forth men year by year who are well qualified for success in every department of life. And I see her slowly but surely increasing in usefulness and strength. I see in the future a large and powerful Alumni devoted to her prosperity and generous in contributing to her needs. I see them mighty in public affairs and doing valiant service for their country in posts of high responsibility and honor. And prominent among her illustrious sons I see many a brother of our own fraternity carving his name by deeds of wisdom and valor upon the highest pinnacle of the temple of fame. Although financial embarrassment and unfriendly criticism may retard her progress and postpone the fulfillment of her brightest destinies, yet the forbidding clouds which now seem to hover above her are in reality but mist and vapor, and will erelong be dissipated by the glorious sunlight of a new era of prosperity. I believe that the interests of our Alma Mater lie very near to the hearts of all her sons, and especially to the brethren of this fraternity. As our Alumni grow in numbers and wealth, their respect for the college and the fond memories of their student life will prompt them to noble deeds of affectionate generosity. New buildings will grace her beautiful grounds, new chairs will be added to her faculty, and all her facilities for instruction will be greatly enlarged and improved; and years hence, when many of us now present shall have been gathered to our fathers and a few gray-headed survivors shall again assemble here to celebrate some important anniversary of this fraternity, they will find a great institution of learning, with a numerous and illustrious faculty engaged in the noble work of implanting in youthful minds the broad, solid foundations of a liberal and practical scholarship.

We are assembled here at a very important period in the history of our college. The very able gentleman who has so long presided over her affairs has relinquished his duties, and a new executive has assumed the responsibility of her future achievements. While we all recognize the learning and ability of our new President, and are confident that his administration will result in the prosperity and honor of the college, yet we can not neglect the distinguished services of President Clark—his many kind deeds and fatherly interest in his students, which bind him very closely to our hearts. He assumed the management of affairs when the college held little else than its charter; and by a display of wonderful tact and skill, and by an indefatigable devotion to his work, he has conquered well-nigh insurmountable obstacles, and contributed most abundantly to its usefulness and prosperity. As an instructor we will ever remember him with admiration and respect, and as a counselor and friend with the deepest reverence and affection; and in whatever great enterprises he may hereafter be engaged, the best wishes of his old students will ever attend him, and our fraternity bids him God speed.

My Brethren, this is the first great festival in the history of this society. Eleven years ago seven of our brothers of the noble class of '71 laid its foundation stone, and through all the successive years it has steadily been increasing in honor, usefulness and strength. The ennobling influences which it exerts upon the tendencies of student life, the lofty ambition which it stimulates, and the warm enduring friendship which it fastens, place it high in our esteem and cause many of our fondest memories to cluster about it. Among its active members it encourages unity of heart and purpose, which aids and encourages them in the duties of their student life and continually incites them to increased intellectual endeavor. It binds together in harmonious brotherhood those of like tastes and aspirations, who, united by a common purpose, are devoted to the highest interests of the college. It promotes sociality and kindly feeling, and by the contact of mind with mind it wears off the rough corners of character and develops qualities of gentleness, dignity and strength. It also affords a mighty protection against the temptations and vices attendent upon college life. And many a heart-sick lad, for the first time away from the comforts of a home and the fond solicitude of friends, has found

within the sheltering arms of Ψ. Θ. Κ. a solace for his loneliness and a protection against excesses to which he might otherwise fall a prey. The privileges of our society are also especially to be esteemed by each of its graduate members. When in quiet solitude our minds revert to college days, and thoughts of old friends and once familiar scenes take possession of our reveries, we realize that there is yet one bright chain which will ever bind us to college life, and cherish and keep alive the sweet remembrances of our youth. And although the friends with whom we shared the pleasures and duties of those happy days are scattered to all the corners of the earth, yet the hospitable arms of Ψ. Θ. Κ. are ever open to welcome us back to the festivities of college life.

As we return from this glad occasion and again take up the cares and duties of our various pursuits, may we find that this revival of old associations has rekindled our ambition and incited us to more noble endeavors. And when the anxieties of life crowd thick and fast upon us and, discouraged and weary, we feel that worldly honors are not worth the toil and sacrifice they necessitate, let the fond memories of Ψ. Θ. Κ. cheer us on to renewed exertions—always remembering that every noble achievement, and every honor to us, redounds to the credit of our Alma Mater and adds to the unfailing glory of our beloved fraternity.

TWILIGHT.

Slowly are the night-shades falling
O'er the valleys, deep and wide;
Close upon the hill tops palling,
Close the lofty mountain side.

Gentle zephyrs touch their heart-strings
As they chant their vesper song,
Waking strains of sweeter music
Than to Siren maids belong.

While the zephyrs chant their music
O'er the valleys, through the glen
Float bewitching tones of sweetness,
Making bright the dreary fen.

Lofty tree tops wave their branches,
Ivies listen as they climb,
Leaflets bow their tiny foreheads,
Noting Zephyr's rustic rhyme.

Busy bees with heavy burdens
Homeward take their weary flight,
Carrying naught but precious nectar,
Labors of the morning light.

Birds of rare and gaudy plumage,
Hush with care their evening lay,
And alone the night-hawks hover
'Round the bier of dying day.

Closely wrapt in quiet slumber,
Nature dreams away the night,
'Till the darker shades have lessened,
And the morn brings back the light.

Till the Sun in folds of crimson
Cares no more his face to hide,
And away the curtain pushes,
Forth his golden car to ride.

Till the lark her nestlings leaving,
Flies to greet the king of day;
And from Nature's dewy pillow,
Calls the angel Sleep away.

Then the Daisy from her forehead
Wipes the dew with gentle care,
While 'mongst grass and humid mosses,
Violets greet the morning fair.

Then all nature beams with gladness,
And with joy her matins sing;
For the Night gives place to Morning,
That she greater joys may bring.

SECRET SOCIETIES.

From the earliest times secret societies have existed and they may now be found, in some form, in nearly every country on the globe and among all classes of people. Notwithstanding the proverbial curiosity and love of gossip of the daughters of Eve, which would not be supposed to be conducive to secrecy, these organizations are not confined to the sterner sex. Their objects, like their names, are legion. They are political or religious, literary or benevolent; they are elevating and progressive, or debasing and behind the times; and, in spite of the disfavor with which they are regarded by some, they continue to increase both in number and in popularity.

The element of secrecy seems to lend to all organizations a peculiar charm and a remarkable power, and in some cases seems strong enough in itself to

keep alive a society that is to all appearance aimless and useless. Even in an organization whose only aim was "the gratification of an insatiable lust of dominion", "whose name has furnished several modern languages with a term expressive of cowardly, premeditated murder", this secret working was so successful that Von Hammer says: "The history of this empire of conspiracy is solitary and without parallel; compared to it, all earlier and later secret organizations are crude attempts or unsuccessful imitations." No one, however, would wish to say that all the good accomplished by such secret societies of the medieval days as the Hanseatic League and the Vehmgericht was outweighed by the atrocious doings of the Assassins, or that all modern secret orders should be done away with because in these last days a society has sprung up whose work is done so secretly and successfully as to cause an empire to tremble, and to make still more apt the oft-quoted line,

"Uneasy lies the head that wears a crown".

The same holds true of the modern secret fraternities of our colleges and universities to which this article especially refers. Though they may in some cases be injurious to temperance and morality they have been instruments of great power in the improvement of mankind; and may still look forward to a long and brilliant future. Although there are persons who regard them as devoid of good—yes, even as dangerous and full of evil—their steady increase in power and reputation, and the honored names enrolled in their catalogues, are strong arguments for their desirability and usefulness. The public literary societies of our American colleges were for a time completely swamped by the great tidal wave of the Greek letter fraternities which swept over them in the first half of the present century, and they have never fully recovered their prestige. The oldest college society extant in this country is the Phi Beta Kappa, which was imported from France by Thomas Jefferson, afterward President of the United States. It is purely literary in its design and was originally chartered as a society at William and Mary college, in Virginia, in 1776. Although many years have now elapsed since the Virginian Alpha passed out of existence the organization at Yale, formed in 1780, is still living. Affiliated societies now appear in nearly all New England colleges and in some institutions of learning in the Middle and Western States. The ball thus started at William and Mary only a century ago has continued in motion until at the present time there are one hundred and thirty distinct societies in the colleges and universities of the United States. Forty-six of these are chaptered fraternities, some of the larger ones having as many as forty chapters They may be roughly divided into literary, literary and social, and social societies, the oldest one of the first class being Phi Beta Kappa. of the second class Chi Phi, and of the last Kappa Alpha.

The value of these college fraternities is so generally admitted that it is hardly necessary here to argue the case. The few who do not believe in them can not be influenced by any ordinary arguments and our space is too limited to undertake a detailed consideration of the question. Not only are these organizations generally valuable to the members themselves but also to the institutions where they exist, and to the officers of government and instruction. Many prominent educators agree that good societies tend to elevate the general tone of a college and make better and more law-abiding students; and that, properly used, they become important factors in the government of the institutions where they are found. They are in this way of much service to the faculty and they aid the college itself by greatly increasing the interest of the graduate in his Alma Mater, inasmuch as the prosperity or depression of the college affects correspondingly his college fraternity. But above all are these societies of value to the young men themselves. Much of the value of a college course, especially in our older institutions of learning, lies in the social life of the students. If the college is rightly governed there is a peculiar atmosphere, if we may call it so, from which the students unconsciously absorb certain ideas and lessons which can be gained in no other way. To a young man leaving a pleasant home and entering upon a college course these secret fraternities with their true friendships, valuable helps and kind encouragements offer great attractions, and but comparatively few there are who wilfully remain outside of them. A celebrated New Englander has said: "The fitness and capacity for friendship, and the ability to attract and retain true friends, are as well subject to cultivation and improvement as any quality or power of mind,

and the cultivation bears rich and precious fruit in the maturity and old age of man. In this culture of the young man lies one of the chief values of college fraternities." Without right principles and worthy objects no society can hold men in the closest ties of friendship; there will ever be dissatisfaction if the secrecy is only a cloak for what may in the gentlest terms be called a waste of time. But a brotherhood with an ennobling object, with members united and pledged to mutual assistance, warning, counsel and encouragement, tends not only to awaken the sympathies of the heart but also stimulates the ambition and fires the intellect. Many a man has been urged on to high scholarship and noble deeds through love for his fraternity. A member of a secret brotherhood feels that he is not alone; he is not working merely for himself but for the organization; he is led to realize the fact that others sympathize with him in his sorrow and rejoice at his successes, and that all the honors he may win add to the unfading laurels of his society.

A quaint old English writer has said: "As human nature rises in the scale of things, so do the social affections likewise rise. Do we not feel in our breasts a strong propensity to friendship? Enjoy we not a pleasure when it is true and cemented, and feel we not a pain when it deadens or declines? What sweetens life but friendship? what relieves care but friendship? what alleviates pain, or makes sorrow smile, but friendship—sacred, holy friendship? * * * Friendship not only appears divine when employed in preserving the liberties of our country, but shines with equal splendor in the more tranquil hours of life. Before it rises into the noble flame of patriotism, aiming destruction at the heads of tyrants, thundering for liberty and courting dangers in a good cause, we shall see it calm and moderate, burning with an even glow, improving the soft hours of peace, and heightening the relish for virtue. Hence it is that contracts are formed, societies are instituted and the vacant hours of life are cheerfully employed in agreeable company and social conversation." This is the language of a man writing in the last century yet the words are as true and forcible today as when they were first written; and it is safe to say that so long as man remains upon this earth, constituted as he is at the present time, so long will secret societies exist and flourish.

POEM.

Composed for the First General Convention of the D. G. K. Fraternity.

BY G. H. ALLEN, '71, HUMBOLDT, KAN.

Beloved D. G. K.! Fraternal band!
Thy happy subjects now from every hand
Assemble here in this glad hour,
Enticed by friendship's subtle power—
Force more potent than wizard charm,
More soothing far than Gilead's fragrant balm.
Enchanting memories thy name surround,
With joyous thoughts the hours abound.
Brothers of this grand and mystic tie,
To this first reunion lightly hie
As gladly hastes the wanderer home
Ere yet to him is lost its bloom.
Returned, beneath the old roof-tree
Of Alma Mater—reunited—we
In this bright circle once again behold
Familiar faces; those so dear of old,
And many others, who, to some though new,
Yet know we, to their plighted faith full true.
All knights of truth who never broke their vow,
Again in unison their loyalty avow.
Our mystic symbol gleaming overhead;
Beneath, the tempting banquet spread,
Renew your fealty here this day,
Devoted sons of D. G. K.
Not a base union this for sordid measure,
Nor fruitless league for senseless pleasure,
But a noble unity of mind and heart;
A school, the nobler virtues to impart
To all the adherents to her beauteous laws.
Time honored fellowship! Most worthy cause!
Who sees in thee no beauties to admire,
For none but self to live doth he aspire.
Illustrious brotherhood, we wish thee peace!
The homage of thy zealous sons shall never cease.
But oft as at thy shrine they wait,
New reverence give, new ardor take.
Emblem of higher union, thy halo bright,
Rests softly 'round as evening light,
With calmly ray and gentle power descends
To crown the day it sweetly ends.
Now brothers in this secret friendship bound,
With thee let honor, justice, truth be found;
Let no base action ever mar the name,
No strife nor envy e'er impair the fame
Of this fair order, whose most worthy charge
Is your inheritance. Rather to enlarge
Thy wisdom and thy charity; to this end
May its benign and generous influence tend.
As sunshine mid the summer shower,
So be the lustre of this hour.

Like joyous rest on traveler's way,
Long live the influence of this day!
A fair memento of a living power
Closely enshrined in memory's sacred bower;
O'er devious ways 'twill shed a golden gleam
As swift we glide adown life's rapid stream.
Our life's a span—a dream soon past,
Few treasures in its path are cast;
Our joy, to catch life's fleeting pleasures,
Our hope, to grasp its passing treasures.
To stay the stream, not ours the power,
But ere has flown the waning hour,
From friendship's store to gain the prize,
May D. G. K. the way devise.

PINAFORE.

To the enlightened multitude who will undoubtedly devour with avidity this tempting morsel of literary hash, I wish to offer a few words of explanation, —an appetizer as it were, to make them relish the more the feast that is to follow.

In order to appreciate this rare effusion, the enlightened multitude must know what I am, how I came so and why I have chosen the subject I have.

It would be quite unnecessary to tell an enlightened multitude who and what George Washington was, for *his* fame has had plenty of time to spread. But as I am yet so young, and as a part of the enlightened multitude will probably hail from Boston, or some other rural district, there may be some benighted individuals among them who have never heard of me.

Let it be known to these that my name is Snooks, and that I am the devil. Possibly this declaration may lower me in the opinions of some, but I think it best to be candid, even at that risk. For it is not *my* fault that I hold this enviable position. It is simply because it was the only office left for me, and because I was the only man left to fill it. That I have none of the qualities which go to make a good devil, those of the enlightened multitude who know me will, without hesitation, affirm. But as it seemed to be the will of an all-wise chance, I entered upon my new duties uncomplaining, knowing that our paper could not flourish without a devil, and consoling myself with the thought that B. Franklin himself once held that office.

Hoping some day to "rise to the top of the tree", and remembering the advice of Dr. Channing to young ministers,—"Never preach from any but great subjects,"—I determined to choose a theme worthy of the most inspired writer; though I was to write instead of preach. And this is why I have taken "Pinafore" as my subject. Could I ever get a greater? No, never! unless it were a nutmeg grater, and even then it could not be more spicy! If now, in my first move toward the top of the tree, I have seized a branch laden with "buds of blushing beauty", or flowers of any sort, rejoice with me, ye enlightened multitude, and you shall share the fruits of my labors. But if it prove to be so old as to have lost its life and freshness, then stand from under, lest I crush you in my fall!

Now, after this exceedingly brief introduction, preface, advertisement and apology, I will proceed to the consideration of my subject proper.

Until quite recently, I enjoyed the distinction of *being* the only man in college who had not seen Pinafore. But I had heard it! or thought I had, and was about disgusted. In the course of time, however, I managed to borrow enough to pay for a ticket, and beg enough to supply myself with peanuts, and then I went; I saw, (or rather heard,) and was conquered; not by the performance, nor even the performers, but by the music. "Oh joy! oh rapture unforeseen"! To learn that what I had heard sung under the name of Pinafore was but a vulgar parody, was, to say the least, a pleasant surprise.

But aside from the music, the opera has few attractions for this poor devil.

To think that such a sensible girl as Josephine should deliberately fall in love with a young man of the same age as her father! To think that the *Captain* should consent to marry his foster-mother! Such things make ridiculous the sublimity ot the other *characters*. And surely there is much that is sublime in some of them; for instance, the cheek of Hebe and Buttercup. The device of mixing up the lad and the dad in their infancy is not bad. For all babies look alike, and such a change would not be noticed. But as for the dad having a daughter, apparently of about the age of the lad, that is too much!

The innocence of that "remarkably fine fellow", Ralph, is in no sense excusable. He who confides in so many, must expect that some one of the crew will be cruel enough to betray him. As for his loving

"a lass above his station", I don't see how that could well be; for he distinctly states that his post is on the "fore-yard-arm", and who ever heard of a woman climbing any higher? And when she gave him to understand that he did not suit her as well as her other suitor, he would blow out his own brains, rather than his rival's. How foolish!

I sympathize with Sir Joseph, because he and I have one point in common in our characters. I firmly uphold the propriety of praising oneself when no one else will, and admire all the admiral does in that direction. How any human being of his sex can survive amid the continual clatter of "forty-leven" "sisters and cousins and 'ornts'", I can not understand. Surely, Sir Joseph is a great man. He who can control so many women is able to rule the men of twenty "navees".

I have no more fault to find with Corcoran, so, admitting that "a better captain don't walk the deck", we will let him pass.

As for that base villain, "Richard Deceasedoptic", I can not find words to express my contempt for one who will, without lying, make his comrades believe that a cat-and-ninetails is a one-tailed cat. I can forgive him, however, for informing the captain of the intended elopement, because if he had not "given timely warning", "three loving pairs" would not have been "on the same day united".

Josephine, I have spoken of, as a sensible girl, and I think there is sufficient reason for so doing. She who will stop and consider the advantages and disadvantages of getting married, and then takes what seems to be the worst step for her, shows no common sense—that is, shows extraordinary sense. She is an obedient child as far as promises to her father go, but the trouble is, she goes farther than her promise.

And now we come to the corner stone of the whole plot,—little Buttercup. Had she not swapped babies, there would have been no fuss; and had she not told of it, there would have been no happy ending. To her, then, let us give all thanks and lay all blame. What if she did victimize the captain? It 's no more than any strong-minded woman would do under like circumstances. Give her credit for her good will—though I doubt if she gave the sailors credit—and be glad with her for the happy settlement of all difficulty. She rejoices at the union of the maiden and the tar; but her cup runneth over when the captain accepts her offer and promises to "never be untrue".

Hebe, I shall say no more of. Her cheek eclipses even that of Buttercup, and is her most prominent feature.

And now, as it is getting late, we will let fall the curtain; and, thanking the enlightened multitude for their attention, let them depart in peace—provided they still live.

A PLEA FOR AGRICULTURE.

Oration Delivered at the Boston University Commencement, June 4th. 1879.

BY SAMUEL B. GREEN.

Only a few years ago, the feeling pervading the community was against all education except the classical. At the same time the idea was maintained that education was for the few; that only to a select class was given to know the wonders and mysteries of the kingdom of science. The thought was seldom entertained that a mechanic or farmer needed an education beyond the simplest English branches. It seems to have been a settled conclusion, that anyone of too weak an intellect to engage in other pursuits had wit enough probably for a successful farmer. And even today the same feeling prevails, to a considerable extent, throughout this country. But agriculture has not always been thus lightly regarded. While Rome was in her glory agriculture was fostered by the general government. It was considered the choicest of occupations, and went hand in hand with all improvements. But when Europe was overrun by hordes of Northern and Eastern barbarians, the sun which had shone so brilliantly on arts and learning, set with the darkest coloring. With that setting was lost for ten centuries the advance which had been made towards an enlightened agriculture and a higher civilization. During the anarchy which followed the superstition and insecurity which characterized the feudal period, agriculture was reduced to the most degrading position; conducted in the most shiftless manner to obtain the bare necessities of life, and was considered fit occupation for only the most servile vassal.

Such was the condition of agriculture even so late as the seventeenth century, when first attempts were

made for its improvement. But it was not until almost the nineteenth century that its real merits began to be appreciated, and persistent efforts made to raise it to a position at all consistent with its real importance. Is it surprising then that it has been found difficult to eradicate such a time-honored sentiment as that which had degraded agriculture for twelve centuries? The light in which many today view science in this connection is but a remnant of the same thing. But what is the use of making any art a science? Why not remain where we are, without trying to discover continually? Why not rest from our labor, and enjoy what we have already found? Did not our fathers do well enough? They are held up to us every day as examples worthy of imitation. Such questions as these are asked, and always considered unanswerable by the inquirer. Let us reflect a moment.

There is a feeling which seems to be born in men, an innate desire to account for action and explain phenomena. This feeling is well illustrated by the manner in which the early Aborigines of this country accounted for the peopling of the world. They believed that once their ancestors were beneath the surface, but seeing light through a fissure in the rocks, determined to reach it. But the idea of climbing up the face of a precipice did not seem plausible; so it was supposed that a vine must have grown, on which one could easily ascend; thus accounting for every supposable circumstance, and in a way satisfactory to the savage mind. Saying nothing of the love of gain, another motive to investigate may be found in the restless and inquiring spirit of man. Discoveries are but for a day. Man must have something to strive for, must be continually advancing or he will retrograde. He can not remain passive.

Thus the motives to investigate are ever powerful; and when guided by proper discretion can not fail to be of great service in opening the eyes of man to the resources around him, giving him a larger field for usefulness and enjoyment, making him better contented with his lot; and at the same time he is impressed with the idea of a Supreme Director whose wisdom, power and goodness is infinite. In agriculture are all these incentives to investigate. Here they lie replete with their invigorating freshness, direct from nature's principal treasuries, in their fullest perfection.

But there are far higher reasons than these for studying its problems, when we remember the dire disasters which have followed ignorance of nature's resources and laws. The terrible misfortune which came to Ireland, through the failure of her favorite crop, when half a million of her inhabitants died of hunger. The misery, famine and disease brought on in India and Persia by their soil refusing its increase. In our own country, the suffering in Kansas of only recent occurrence. And that annually 25 per cent. of her crops are destroyed by insects. Are not these the most powerful inducements offered to investigate, to study, to find some means to avert such ruinous casualties? Does man want more to do? Is there a field where he can more surely benefit his fellow men? Then remember that agriculture has built up our country! That it has borne the expense incidental to the introduction of our manufactures; that it has brought the balance of trade in our favor. Remember that, last year, four-fifths of our exports were of its produce. Can we afford to overlook its interests? Upon its prosperity depends the future prosperity of our country. It is the basis on which our very existence rests. What will be the use of building magnificent cities, of perfecting our esthetic qualities, and improving our arts and learning, if we neglect agriculture? What will it profit us to erect a stupendous superstructure and leave the foundation insecure?

CUT FEED.

Buy-Cycle!

'79 *would* have Vet.

Prof. Parker says adieu.

April showers last week.

Joyner, '82, is still on the sick-list.

Have you seen the A. C. A. catalogue?

Small choice of rooms left for the Freshmen.

The potato-bugs are doing well, and we expect a large crop.

painted by Keith. The effect of so many specimens of the beautiful in art is evident upon the life of the college; and there is proof positive that the sight of pictures is in itself an education.

Our Fire Brigade is unsurpassed in efficiency and discipline. The manner in which lily-fingered hands swing buckets "along the line" is enough to stifle one with admiration.

The department of biology was added this year, and dissecting frogs and rabbits has become almost a popular occupation with some of the stony hearts of '79. The head of this department has been indefatigable in her efforts with the biological laboratory, and the room is now filled with curious, and, as she affirms, "beautiful things".

The societies, literary, missionary and scientific, are in a flourishing condition. The Microscopical society is the most important of the latter class of sisterhoods, and last Monday evening gave a reception to the Boston Microscopical society, when about fifty ladies and gentlemen came out to the college, bringing their scientific ideas with them. After a collation, boating was in order, and the crews turned out in full dress uniform. The guests were proportioned to the crews, and the boats pushed from the shore. After "doing" all the important points, the boats assembled, according to custom, near the middle of the lake, for a social reunion of college and individual boat songs. Such an assemblage is termed an "island", and on that occasion some reckless individual inquired if it were a c(h)oral island. After the songs were finished several ladies and gentlemen of the B. M. S., including Mrs. Mary A. Livermore, addressed the students, and then the crews commenced an exciting race for the shore.

Smith College:—

During the first three days of last week our beautiful buildings were thronged with visitors from near and far who had come to witness the graduation of the first class from "Smith Female College". The principal events of this first commencement week were the Seniors' concert on Monday evening, the Seniors' reception on Tuesday evening, and President Eliot's address Wednesday afternoon. The Boston Beethoven club, aided by Professors Blodgett and Lalor, gave a very enjoyable concert before a brilliant audience, and the fact that it was financially as well as musically successful, added not a little to the Seniors' pleasure. The reception was held in the Social hall and many invited guests from a distance were present. The graduating class was small but its members were many of them inhabitants of other states than Massachusetts. Although there were only eleven in the class, six states were represented—Maine, Delaware, New York, New Jersey, Vermont and Massachusetts. The Seniors gave no public exercises on Wednesday, but handed their graduating theses to one of the professors. President Eliot's address was what might have been expected from the head of the most prominent university in this country. He spoke of the work, methods and peculiar policy of the college, of the supposed evils of woman's education and, while holding that the ideal education for a young woman should not differ from that for a young man, he did not believe in the system of co-education. After commending the principles of religious toleration on which the college is conducted, he concluded with special advice and encouragement to the graduating class. At the close of this address a short poem by Elizabeth Stuart Phelps was read by Professor J. W. Churchill, and thus terminated the exercises of our first commencement.

University of Michigan:—

The *University Chronicle* states that every year since they have been admitted to that institution, with the exception of 1878, more girls than boys in proportion to their respective numbers have passed successfully through the course and been graduated. In 1872 the per cent. of girls graduating was 100; of boys, 90. In 1873, of girls, 100; of boys, 52. In 1875, of girls, 70; of boys, 60. In 1876, of girls, 67; of boys, 63. In 1877, of girls, 77; of boys, 63; and in 1878, of girls, 50; and boys, 69. This seems to prove that young ladies can pursue collegiate studies quite as successfully as the young gentlemen.

Harvard:—

The much needed gymnasium is being pushed rapidly toward completion, and will probably be ready for the reception of apparatus by the beginning of next term.

The exercises of class day passed off with great success. The weather was beautiful, the exercises

themselves of a high order, and managed admirably, the music being exceptionally fine.

There is complaint that some departments of our professional schools are not better accommodated. This is especially true of the chemical laboratory of the medical school, which is inconvenient in the extreme.

Boston University:—

Many applicants for admission to the university are being turned away for lack of accommodations.

One hundred and seventy persons graduated from the different departments this year. From the College of Liberal Arts, 22; College of Music, 2; College of Agriculture, 6; School of Theology, 19; School of Law, 47; School of Medicine, 35; School of Oratory, 31; and from the School of All Sciences, 8.

Those who complain of the shortness of life let it slide by them without wishing to seize and make the most of the golden minutes. The more we do, the more we can do; the more busy we are, the more leisure we have. Read not to contradict and refute, nor to believe and take for granted, but to weigh and consider—*Bacon*.

COMMENCEMENT WEEK.

The usual quiet Sabbath of commencement week at the Massachusetts Agricultural college was varied a little this year by a sad bereavement to the Freshman class. Having secured from Lieut. Morris the use of cannon and ammunition for Freshman night, their pleasant anticipations were rudely dashed to the ground on Sunday morning at finding that the guns had been dismounted from the carriages and had mysteriously disappeared. The full extent of their calamity was not known, however, until further examination showed that the malicious parties, to make sure of the success of their plot, had sacked the magazine leaving not the faintest vestige of ammunition. Of course we can not imagine who could be the instigators or perpetrators of such a dastardly trick upon the Freshies, robbing them of their right to revel amid all the discordant and infernal noises and hideous orgies which their wild and undeveloped minds could conceive, unless it could be that some of the nearer residents to the college could be so utterly devoid of philanthropic ideas as to begrudge one night's sleep out of the three hundred and sixty-five in the year, for the highest good of this infantile band.

Monday morning ushered in the usual duties attendant upon the opening of commencement week. The forenoon concluded the examinations commenced last week, with the exception of the Senior examination in Agriculture for the Grinnell prizes. The usual drill in the afternoon brought with it a foretaste of the final sweltering to be enjoyed by the students Wednesday morning, and quite a number of visitors were present.

The Farnsworth Prize Speaking took place in Amherst college hall Monday evening, the exercises commencing at eight o'clock. Music was furnished by the Amherst band. We think the speakers are all worthy of praise and that they did credit to their selections, to themselves and to the college. We certainly regret that Mr. Hills of the Sophomore class was so thoughtlessly overlooked by his friends who failed to provide him with the usual floral tribute, but the applause which he received well requited him for this neglect. The D. G. K. fraternity held the first session of their convention at eleven o'clock Monday evening, after which they retired to their annual banquet at the dining rooms of F. P. Wood, where, with feasting and song, addresses, toasts, and social intercourse, the hours sped away until we were reminded that other duties were awaiting our attention. Long will this occasion be remembered by all. There was not so large a number present as was expected, as some of the graduate members were unexpectedly prevented from attending almost at the last moment and others were unable to arrive in time for the first session of the fraternity; but between thirty and forty were present, among whom were some of its founders from the class of '71.

A larger number than usual of the alumni were in attendance at the Alumni Meeting Tuesday morning, owing to the class reunions and D. G. K. fraternity convention. The meeting was adjourned to half past eight Wednesday morning on account of a misunderstanding as to the time of meeting and as more of the alumni would then be present.

The Seniors' Examination in Agriculture for the Grinnell prizes at the college chapel was quite

largely attended. The examining committee were Dr. Nichols of Haverhill, Benjamin P. Ware of Marblehead, and O. B. Hadwen of Worcester. The topics for examination were:

SOILS.

1. Composition and origin of soils.
2. Practical varieties of soils; their characteristics and adaptations.
3. Soil tillage; the methods and effect of the same.

PLANTS.

1. The structure of plants; the organs of plants and their offices.
5. Composition of plants and the sources from which the materials of their structure are obtained.

SOILS AND PLANTS.

6. The effect on the soil of *natural* plant growth; effect of artificial production.
7. The condition of an exhausted soil.
8. Fertilization; what agents or substances may be employed for the purpose, sources from which they may be attained, and their influence on soils and plants.

FARM MANAGEMENT.

9. Farm economy. Farm accounts.
10. Selection, division, fencing and cropping of a general farm.
11. The influence of agriculture on national character, wealth and prosperity.
12. Growing grain as a market product and its effect on the farm.
13. The fruits of the farm.
14. The demand for cattle and their products, and the source and extent of the supply.
15. Improved breeds of cattle; their characteristics.

The second session of the Φ. Θ. Χ. fraternity convention was held Tuesday afternoon. The members of the society, the Faculty, and the friends of the members, to whom complimentary tickets had been issued, assembled in the chapel at 2 P. M., to listen to an oration delivered before the convention by James H. Webb, Esq., '73, of New Haven, Conn. Mr. Webb, in consideration of the work and purposes of the society, to a great extent educational, took as his subject, "Practical Scholarship". He He dwelt with particular emphasis on the importance of the study of history and political economy in the preparation of young men for the responsible duties of citizenship in this country. The address was well attended and was listened to with a great deal of interest by all. After the oration a secret session was held, where matters of importance to the fraternity were considered, and considerable important business of the society was transacted.

The class reunions took place Tuesday night; '71 and '73 held their second reunions, and '76 its first. Wednesday morning at 8:30 occurred the adjourned meeting of the Alumni Association and at 10:30 quite a concourse of people had assembled at the parade ground to witness the review of the battalion. As the governor was unable to be present the cadets were reviewed by the lieutenant-governor.

At the conclusion of the military exercises the battalion was marched to the armory where they turned in their equipments, and were then dismissed.

The graduation exercises took place in Amherst College hall at 2:30 P. M. The speakers were as follows: 1st, Samuel B. Green of Chelsea, subject, "A Plea for Agriculture". 2nd, Walter Alden Sherman of Lowell, subject, "Food". 3d, Hiram Edmund Baylies Waldron of Rochester, subject, "Improvement in Transportation". 4th, Roscoe Wesley Swan of Framingham, subject, "Vision". 5th, Richard Storrs Dickinson of Amherst, subject, "Irrigation". 6th, Charles Rudolph of New Haven, Ct., subject, "Progress of Science". 7th, George Parmenter Smith of Sunderland, subject, "Forestry". The Valedictory addresses were given by the last speaker. At the close of the literary exercises, Lieut. Gov. John D. Long addressed the graduating class and presented the diplomas of the college to them in the name of the Commonwealth of Massachusetts. The Boston University diplomas were handed to the matriculants by Prest. Flint.

The exercises of the week closed with the following announcement of

PRIZES AWARDED.

Farnsworth Rhetorical Medals. Gold medals to C. L. Flint, Jr. of Boston, from the Sophomore class, and to G. D. Allen of Amherst, from the Freshman class. Silver medals to J. L. Hills of Boston, from the Sophomore class, and to J. E. Wilder of Lancaster, from the Freshman class.

Grinnell Agricultural Prizes. First prize of fifty dollars to Samuel B. Green of Chelsea and the second prize of thirty dollars to George P. Smith of Sunderland.

Hills Botanical Prizes. First prize of fifteen dollars to Walter A. Sherman of Lowell, and the sec-

ond prize of ten dollars to R. S. Dickinson of Amherst.

REPORT

Of the D. G. K. Fraternity, held at Amherst, June 23d and 24th, 1879.

In response to the call issued last month, a considerable number of the alumni, and undergraduate members, met at Frank Wood's rooms in this town to celebrate the first general convention of the D. G. K. Fraternity, on Monday evening, immediately after the conclusion of the Farnsworth prize speaking. Some time was spent, before coming to order, in exchanging greetings with old friends and making the acquaintance of new. The almost continual hum of voices was occasionally hushed into silence when some one of us felt inspired to entertain the company with an anecdote, or the latest Pinafore pun. All seemed to thoroughly enjoy themselves and were made happy by the prospect of a supper which the committee had had spread for the occasion.

After the organization of the convention, the members listened to a short sketch of the growth of the fraternity, read by Mr. S. B. Green of the graduating class. At the conclusion of this very interesting article, the necessary preliminary business of the convention was transacted, and then by a unanimous vote the meeting adjourned to the banquet. This, gotten up in Mr. Wood's best style, was all that could be wished for; in fact, it was more than most of us expected; but we proved equal to the occasion and did ample justice to what was spread before us. When the last course was finished, some one started the society song, which was joined in heartily by all. The ball thus set in motion rolled back and forth between the alumni and the undergraduates; the old glees of the former alternating with the newer songs of today.

Among the toasts offered by the toast master, Mr. Nichols of '71, were the following: "The President of the United States", responded to by Mr. A. W. Dickinson, '74; "The D. G. K. society, as seen in the past," by Mr. J. H. Webb, '74; "D. G. K. and its prospects for the future", by Mr. Clark, '77; "Our society as a prevention of cruelty to Freshmen", by Mr. C. D. Warner, '82; "Our forthcoming paper", "Pinafore", Ex-Pres. Clark. "The originators of D. G. K." and others, called forth appropriate remarks from several of our members. These seemed to inspire our singers anew, and then voices were heard until they separated for the night,—or rather, for the day; for it was Tuesday morning long before they retired.

The second session of the convention was held at the college yesterday afternoon. It was preceded by the reading, by T. E. Smith, '76, of a poem written for the occasion by Mr. G. H. Allen, '71, which was followed by an oration delivered by Mr. J. H. Webb, '73, in the college chapel before the fraternity and some of their friends. The oration, printed in full in another column, speaks for itself. We will simply say that, so far as we know, all who heard it felt fully repaid for attending.

Before going into secret session those of the fraternity who were on hand had their photographs taken in a group on the steps of north college.

At the final meeting several subjects of great importance to the society were brought up for consideration and disposed of in a manner which can not but secure the future success of D. G. K. At six o'clock the convention adjourned to commencement week of 1880. About thirty-five members of the fraternity were present at this our first convention, and letters and telegrams of regrets and best wishes were received from a score of others. The meeting of so many old friends and society brothers has infused new life into the good old order and the outlook for the future of D. G. K. is brighter than ever before.

ALUMNI MEETING.

In the absence of the president the adjourned meeting of the Associate Alumni was called to order by the secretary, and Mr. Sparrow of '71 was made president *pro tempore*. The members then proceeded to the election of officers for the ensuing year, with the following result: President, James H. Webb of '73; vice-presidents, E. R. Fisk '72, F. C. Eldred '73, J. M. Benedict '74, J. W. Clay '75, W. A. McLeod '76, Joseph Wyman '77, and C. F. Coburn '78; corresponding secretary, Prof. S. T. Maynard '72; recording secretary, P. M. Harwood '75; treasurer, H. E. Stockbridge '78; executive committee, E. E. Thompson '71, and J. W. Clark '72; auditing committee, Morse '71, Phelps '74, and Clark '77.

"Scrub one!" is all that has been heard from our ball players this term.

If practice makes perfect, the drum corps should be well up in their art by this time.

A gray-headed Alumnus sees Pinafore three times in two weeks, and wants to go again.

Three cheers for Prof. Stockbridge announced, on the 17th, the end of class-work for '81.

Applications for admission are four times as numerous as they were last year at this time.

Of the ninety who have been connected with the Freshman class this year, sixty-eight remain in college.

The voice of the mowing-machine is heard in the land, and the gay and festive tedder keeps time to its music.

Herbariums this year must contain at least two hundred specimens—just double the number required of '81.

The Freshmen "sat" for their picture on the steps of North College, and "stood" for it in the corn field while planting.

The Sophs were excused from agriculture the other day, to investigate the whereabouts of Moses when the "glim" was "doused".

Floyd, '82, who has been at home on account of sickness, has returned. His chum, F. P. Taylor, is rolling across Europe on a bicycle.

Lucky for us that prize speaking comes but once a year, for the ravings of the ambitious individuals who take part would surely drive us crazy if continued much longer.

If Waldron had shot with the rifle team last Saturday, they would probably have defeated the Alleghanies. The score was 258 to 251, out of possible 300, in their favor.

He was an innocent Freshman, and happy in the expectation of passing a good examination. But alas! he lost the paper on which he had written the numbers of the propositions, and, of the dozen or so that he cut out of his book, only two were called for. And now he wants to know what he has done to deserve such luck.

Saturday night the Sophomores hid the cannon, hoping to prevent the celebration of Freshman night. In their surveying examination the following dialogue took place: Prof.—Mr. —, how would you calculate the height of the flagstaff? Thoughtless Soph.—I'd measure a base line from the foot of the staff out to the cannon, and— Prof.—Please tell us where the cannon are? Thoughtful Soph.—Er-I mean-er-out to the timbers—etc. Nothing further was said about cannon, but his class-mates looked knowingly at eachother and grinned.

Dialogue—Characters: "Intellectual" Senior and Aggie Sophomore. Scene: Amherst postoffice.

In. Sen.—Good afternoon; is this Mr. ——?

Aggie S.—That is my name.

In. Sen.—Perhaps you can tell me the name of this little plant. Our professor in botany says that he has never seen one like it, and is unable to determine where it belongs. Can you give us any light on the subject?

Aggie S.—Perhaps so. Its name is *polygonum hydropiper*, and if you will take the trouble to consult "Gray's Manual" on the subject, you will find your rare specimen described as *common* smartweed. (*Exit* enlightened but crest-fallen intellectual.

Prof. Goodell has recently given another evidence of his interest in the students who have been under his instruction, by issuing an "Obituary record of the graduates of the Mass. Agricultural College". It is replete with interesting facts and will be greatly prized by our alumni.

This is indeed an age of progress, and though the absence of Latin and Greek from the curriculum of a collegiate institute was at first laughed at, slowly, but surely, the other colleges are approaching the ground adopted by the Massachusetts College of Agriculture. All of them are bestowing time and at-

tention upon the sciences, formerly devoted to the classics; and many of them, though not properly chartered universities, have established purely scientific departments. And now, a petition signed by many of the head masters and most prominent educators of Great Britain, has been presented to the authorities of Cambridge University, asking that Greek may no longer be a compulsory part of the curriculum.

From time to time, ever since the advent of the pioneer class, there have appeared college songs celebrating events of more or less interest. It is really too bad that attention from the muses should have received no better reward; but, so far as we know, there has never been a systematic attempt to collect and preserve these souvenirs of the past. Some such effort should be made lest even the tradition of the mighty deeds, and jolly times of our predecessors, sink into oblivion. The leader of the '82 Glee club would be the right man to undertake the task.

It is a good omen that so few students outside the class of '79 are to leave college at the close of this year. It shows that those best acquainted with the institution are satisfied with its educational facilities, and have faith in its future, which now, with the prospect of a large Freshmen class, looks doubly bright. Though the teaching force has necessarily been somewhat reduced, we believe that means will be found by which the curriculum need not be curtailed. Certainly the veterinary department has met no loss, but, owing to the efforts of the Seniors, strength has been added to it.

For five years two officers of Amherst College have been in the habit of annually obtaining from the "Durfee plant house" such flowers and shrubs as the college required; and instead of paying for them, stating that we had the free use of their hall and library, and that in return they were entitled to such plants as were needed. As both the gentlemen were men of standing, the head of the horticultural department supplied everything called for and never presented a bill. Now comes the fact that the M. A. C. has never had the free use of College hall, but has always paid the same prices for its use that are charged other lessees, and that our students have always been obliged to pay for the privileges of the Amherst College library. Now one of the persons before alluded to is so intimately connected with the finances of the college that he *must* have known these facts; and the affair, therefore, looks like a deliberate attempt on the part of the authorities of the older and stronger institution to swindle the younger and weaker. If this is a sample of the actions of the officers of the college, what can be expected from the students under their charge?

OTHER COLLEGES.

WELLESLEY:—

Wellesley's first commencement occurs June 24th, but the exact programme has not been made public; it is certain, however, that the public performances of the graduates will consist simply in gracefully receiving the first diplomas ever won at *College Beautiful*.

In our young institution improvement is ever busy, and advancement is the law of her being. The library has been much improved during the past year and increased by the addition of five thousand volumes. Among other recent acquisitions are many musty old manuscripts, and a number of autographs of the rare old men who have left their impress upon the ages of the past, and whose influence will be felt in the events of the future. Many new portraits of great writers grace the walls and serve as indexes to the contents of the different alcoves. Busts of the grand old ancients smile calmly down upon us as we pass curious treasures of antiquity, and memorials of the great and good are within reach and sight.

The art collection has recently been greatly enlarged, but as yet there is little arrangement visible in the gallery.

The corridors on all four floors are hung with pictures, and a few steps in any direction brings one face to face with some cast of great renown. The latest arrivals of this class are a life-like Diana, and the *Grand Diane a la Biche*. Many new oil paintings have been donated to the collection, the most important new one being the magnificent *Mono Pass*,

THE CYCLE.

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PROGRAMME OF EXERCISES

For the Tenth Graduation Anniversary, June 21, 22 and 23, 1880.

MONDAY, June 21.—Farnsworth Prize Declamations, at 8 P. M.

TUESDAY, June 22.—Examination of Candidates for admission to College, in the Botanic Museum, at 9 A. M.

Public Examination of the Graduating Class in Agriculture, for the Grinnell Prizes, at 10 A. M.

Oration and Poem before the Q. T. V. Fraternity, at 2 P. M.

Dedication of Class ('82) Fountain, at 4.30 P. M.

President's Levee, at 8 P. M.

WEDNESDAY, June 23.—Alumni Meeting, in the Botanic Museum, at 8.30 A. M.

Review of the Battalion of Cadets, by His Excellency, the Governor, on the Parade Ground, at 10.30 A. M.

Graduation Exercises at 2.30 P. M.

Theses by Members of the Graduating Class.

Presentation of diplomas by His Excellency, John D. Long.

EDITORIAL.

We take pleasure in presenting to the public, "with the compliments of the Editors," this second number of THE CYCLE. The success of last year's experiment confirmed the idea that we were supplying a popular want, and having endeavored to profit by the experience of our predecessors we venture to believe that this issue will be found even more acceptable than the first. We desire to emphasize the fact that, though published by a secret society, THE CYCLE aims to be a paper in which all the students and friends of M. A. C. shall feel an interest; a paper in which shall be impartially chronicled the events of the year, and which shall be, to a certain extent, an exponent of the student life of the institution.

Our readers will notice the fact that the report of the exercises of Commencement week has been omitted from the body of the paper and issued in the form of a supplement. It was found last year that the delay caused in waiting for the accounts of the various exercises of the week necessarily postponed the appearance of the paper until so late an hour as to seriously lessen its sale and to obviate this difficulty the experiment is now tried of issuing this matter in supplemental form. In reviewing briefly the contents of our paper we would especially call attention to the excellent article by Bro. Wheeler of '71, entitled "Japan's Colonial College." Mr. Wheeler's connection with the Sapporo Agricultural College, first as professor and afterward as president, gave him an opportunity of becoming familiar with the condition and progress of education in Japan and his views on this subject, as well as his description of the institution of which he was the head, will be read with interest by all. The report of the exercises at the dedication of '82's fountain, with Mr. Warner's ode and an abstract of Mr. May's oration, will of course be of interest to the new-fledged juniors; our alumni may find something new in the page devoted to "Personals," while the space allotted to advertisements should not escape attention.

In conclusion we have only to thank our friends for the support and encouragement we have received from them, and to assure them that THE CYCLE will appear each Graduation Day, and that its columns will be at all times open to items of interest to the students and friends of the Massachusetts Agricultural College.

The military drill of the students has always been one of the most prominent features of our college. A few years ago the "Agricultural Cadets" were as

well drilled a battalion as could be found in the State. Lately, however, a lack of interest in this department has been painfully apparent; many of the students seem to seek every opportunity of evading military duty and the effect of this can be easily seen in the way in which the manual is executed. Can we not bring back in some way the *esprit de corps* of several years ago, when an absence from drill was almost "the unpardonable sin," and so restore our battalion to its former excellent condition. With the aid of the Morris Drum Corps, in whose prosperity we are all interested, this certainly seems practicable.

"Another link has detached itself from the chain of ages and fallen into the abyss of the past." The editorial staff claims no originality for the above statement and cannot be held responsible for its accuracy, but, assuming its truth, it seems to suggest the advisability of glancing for a moment at the year or "link" which has met this melancholy fate. When we returned last September, from wanderings through the mountains or along the seashore, to the routine of college life our hopes were high for a large incoming class. But alas for human expectations! Less than a score of freshmen assumed the severe task of supporting the name of '83. The startling change from eighty-eight freshmen in 1878 to eighteen in 1879 seems to indicate "a screw loose" somewhere which we hope the activity and zeal of our new president will at least partially remedy this year.

The fall term passed with little excitement among the students, the principal events being the game of football in which our team easily defeated the Amherst freshies; the charming serenade to which we were soon after treated by a few members of that noble institution (which was, however, sadly marred by the unseemly haste of the musicians who departed leaving their "horns" behind them); and the appearance of the *Index*. This latter caused the usual flurry among those who were subjected to "grinds," and underwent the usual amount of criticism. Without attempting any review of it at this late day we may say that in its typography and general appearance it is one of the best. The resignation of Farm Superintendent Southwick took effect November first, he accepting a more advantageous offer in Billerica. Since his departure the farm has been managed by Foreman Tillson under the direction of Pres. Stockbridge. During the fall term Prof. Hitchcock of Amherst College taught physiology and in the winter and spring terms Prof. Emerson of the same institution had the classes in geology and zoölogy. The lectures on veterinary science were acceptably delivered during the winter by Dr. Winchester of '75.

It was during the winter term that the Farmers' Institutes attracted much attention from the students and at their invitation the last one of the season was held at the College. This meeting was largely attended, the chapel was tastefully decorated, the exercises were interesting, the orchestra played, a free dinner was served to nearly three hundred visitors and the enthusiasm of the farmers in support of M. A. C. was remarkable. It was at this time we received the first public announcement of Professor Goessmann's determination to stay with us notwithstanding his very flattering call to North Carolina. This statement was received with great applause as all felt that neither the College nor the State could afford to lose so able and popular a man. The agitation of the subject of the union of the two colleges in Amherst was watched with great interest at M. A. C.; with pleasure did we see protest after protest sent in to the General Court and it was with a great sigh of relief that we learned that the Legislature of 1880, like its predecessors, deemed such a union not only undesirable but impossible.

Not much can be said in favor of the "Seventeenth Annual Report" which appeared early in the spring, and the resignation of President Flint and the promotion of Professor Stockbridge are commented on elsewhere.

Nothing occurred to break the monotony of the spring term except the occupation of Prof. Graves' former residence by the Aleph of Δ. Φ. Σ. as a chapter house, the erection of their class fountain by '82 and the usual announcement of Commencement appointments. Boston University Commencement day was June second and at the exercises in Music Hall the agricultural department was represented by Mr. W. G. Lee, whose oration, "The New Era," may be found in another column.

The present anniversary week concludes the thirteenth year of M. A. C., which on the whole has not been so prosperous as we might wish. Several good

things have, however, been accomplished and we have reason to believe the coming year will be one of prosperity and progress.

The lack of interest in base ball, foot ball, and all athletic sports at M. A. C. during the past two years has been frequently lamented by some of our number. Last year, however, we demonstrated the fact that we have excellent material for a foot-ball team. It is to be hoped that this matter will be taken in hand as soon as possible after the opening of the fall term and with good management we may be confident of playing some creditable games. The rifle team also, with practice, could do some very good work and should keep itself in condition to challenge as well as to be challenged. And now that we are speaking of these student organizations, we wish to commend most heartily the efforts which have resulted in the formation of a college orchestra, and to congratulate the leaders of the enterprise upon their success. The undertaking has been very popular among the students and we prophesy that so long as it remains in organization the orchestra will be supported liberally and valued more and more.

Like our predecessors we are called upon to chronicle the advent of a new president for M. A. C., but we may be allowed to hope that this will not become a permanent feature of THE CYCLE. Frequent changes in the faculty of any institution have a demoralizing tendency on both the professors and the students and especially must this be the case where the changes are in the executive department. It was evident, however, from the first that President Flint could not reside in Boston and manage a college in Amherst and that while he was nominally the head of the institution his work as such must be performed by another. This condition of affairs was most unfortunate and it was seen that he must remove his residence to Amherst or resign the presidency. This latter course he preferred to take and the trustees, doing the best thing under the circumstances, elected Professor Levi Stockbridge his successor. While this gentleman may not be the man described in our editorial of a year ago as the one for the position, still his long connection with the College, his knowledge of its needs, and his zeal for its success promise a bright future for Massachusetts' College. Pres. Stockbridge became connected with the institution as Farm Superintendent in 1867, but was soon persuaded to accept the position of Professor of Agriculture, which difficult place he has since filled with remarkable success. One of the most active and progressive members of our faculty, his experiments with fertilizers have made his name familiar to the farmers of the country while his observations with the lysimeter have attracted the attention of German scientists. During Pres. Clark's absence in Japan, as well as while Pres. Flint was ostensibly the head of the College, he, as senior member of the faculty, acted as executive and has thus had abundant preparation for the duties now devolving upon him. Let us hope that the trustees, faculty and students will work together with our new President for the greatest good of the College and that a large incoming class next fall will be but the opening of a new career of prosperity and usefulness for our loved M. A. C.

During the last session of the Legislature, M. A. C. was the subject of much discussion, and while its union with Amherst College was declared impracticable, many plans were suggested by which its condition and management might be improved. One of the proposed changes seemed at one time about to be adopted by the general court, but in the end the bill was laid over until next year. When it again comes up, we hope its advisability and propriety may be so apparent as to cause its passage with little opposition. This desirable change provides for alumni representation on the board of trustees. While the bill may have been too strong in the condition in which it was presented, it is to be hoped that in a modified form it may become a law. This year the tenth class graduates from the college, and among our older alumni are men who are well qualified to take some part in the government of the institution. We do not deem it advisable at once to displace a number of the old board and substitute young men with no experience in educational affairs, but it is to be noticed that the bill does not compel the alumni to elect one of their number to the position of trustee. It simply provides that a certain number shall be elected by the alumni of three years standing, and it is not to be supposed that in all cases graduates of M. A. C. would be selected.

JAPAN'S COLONIAL COLLEGE.

BY WILLIAM WHEELER, '71, EX-PRESIDENT SAPPORO AGRICULTURAL COLLEGE.

COLONIAL DEPARTMENT OF JAPAN.

The Imperial Colonial Department of Japan—the Kaitakushi—is charged with the sole administration of government in certain territorial domains of the Empire. These comprise—since she exchanged, in 1875, her possessions in Saghalien for Russia's "Little Kuriles"—the large island of Yezo, the barely emersed spinous processes of the great back-bone of Japan extending north-easterly to Kamschatka, the Kuriles, and all other neighboring islands of inferior extent. Taken collectively these constitute Hokkaido "The way to the Northern seas" which name has generally displaced the specific one, Yezo, "Barbarian's land."

Yezo has an area of 34,950 square miles, exceeding that of the five minor New England states combined, while the dependent islands aggregate upwards of 3000 square miles, nearly three times the area of the smallest state of the Union.

The government is vested in a Governor General, or Chokwan, who is ex-officio one of the Imperial Councillors or Sangi, and two vice commissioners, with a large clerical force resident at the national Capitol. The local administration is vested in a resident Governor, subordinate to whom are the chiefs of numerous departments of a bureaucratic system, established at Sapporo, the new Capital of Hokkaido, with a similar subordinate organization at Hakodate, the only port of the island open to foreign commerce.

Until within eleven years, no systematic attempt had been made by the general government to develop the natural resources of this territory. The people, then numbering about 150,000, lived chiefly along the coast and drew their sustenance from the sea, importing rice, cloth, and fermented wine. Herring and salmon fisheries, and their associated manufactures, and the gathering of seaweed constituted the principal industries of the island.

It was left for the restored and reorganized government under the present Mikado to lend the first active and material aid to the development of the vast resources with which nature had endowed this domain. The Kaitakushi was organized upon an equal footing with the other departments of the general government, was allowed an annuity of one million dollars for ten years in addition to the resources of the colonies with which to carry on its work, and some of the best native talent was established in its service. A corps of American experts and scientists was employed under the direction of General Horace Capron, formerly U. S. Commissioner of Agriculture, to inaugurate American systems of agriculture and mill-working, and to make thorough botanical geological and topographical surveys of Yezo.

In this large tract of volcanic character, containing still many lively suggestions of warmth and energy not far below the surface, and comprising vast areas of undefiled and scarcely explored mountain solitudes, these investigators have definitely marked immense deposits of excellent coal; gold, silver, copper, iron, lead and sulphur in more or less promising quantities; soil, in valleys and mountains, of great fertility; a climate presenting agricultural possibilities not unlike those of the great corn and wheat belt of America, and of rare salubrity; mountains clothed from toe to top in a great variety of fine timber; streams and rivers offering more gratuitous power than the empire is consuming and one of them, the Ishikari, the largest and best adapted for navigation of any river in the empire.

In the wide, fertile valley of the Ishikari, on one of its largest tributaries the Toyohira twenty-four miles, (by a railroad now building), from a good harbor on the west coast—at Ohara—and in the same latitude as Concord, N. H., Central Oregon and Southern France, the new capitol, Sapporo,* was established ten years ago.

THE COLLEGE.

Here the Colonial department resolved to plant the nucleus of a system of western civilization, of which that of America was adopted as the most desirable type, which, acting upon native material through all legitimate courses without the direct admission of foreign colonies, should impart its characteristic impetus to the agricultural, industrial and educational interests and institutions of this part of the empire.

In accordance with this purpose, a plan, long held in contemplation, was adopted in 1875 for the estab-

* Sapporo is an abreviated form of Satsu—poro, two words of the Aino language signifying "Wide Plain."

lishment of an Agricultural College for the especial education of young men designed to become officers and skilled employees of the Kaitakushi. The department had previously maintained, first at Tokio, and subsequently at Sapporo, an English school under American teachers, which now became the preparatory department of the Sapporo Agricultural College.

Inasmuch as the rationale and success of the Massachusetts Agricultural College constituted the argument for the adoption of the latter as a model for the first Agricultural College of Japan—perhaps of Asia—the president of the former, Col. W. S. Clark, and two of its early graduates were selected early in 1876 to set the new institution in operation, which was fully done in the following August with a Freshman class of twenty-four students, and twenty-six pupils in the preparatory department. Subsequently three more Americans have been appointed to the faculty of the College. Two of these gentlemen are graduates of M. A. C., one of whom graduated at the Harvard Medical School, and one of the Massachusetts Institute of Technology.

BUILDINGS, FARM, AND EQUIPMENT.

The College buildings are pleasantly situated in a square of about fourteen acres in the northern part of the city, directly in front of its somewhat imposing Capitol and facing a beautiful mass of mountains which rises abruptly from the plain a few miles to the west. They comprise the following structures, all of wood, erected in foreign style: The dormitory with warden's office, dining hall and social hall attached; North College, containing accommodations for the mathematical and engineering departments, the college reading rooms and the preparatory department; a large chemical labaratory; Military Hall, containing drill hall, armory, museum of natural history with work room; agricultural and botanical lecture room with cabinet attached, and the class room for anatomy, veterinary science and literature; College Library, containing foreign and native departments and reference room; and an astronomical observatory.

Lying across a broad avenue toward the north and facing College Square are the plant houses and botanic gardens covering an area of about three acres.

The College Farm is situated at the northern edge of the city and contains two hundred and fifty acres, one-half of which is fine tillage and mowing land, and the remainder about equally divided into pasturage and woodland. Here have been erected a large model barn, with drained cellar, stock floor and hay floor, each accessible to loaded wagons, with one wing for sheep, swine, breeding animals, steaming apparatus and wind-mill, and another for vehicles and tools; a large corn barn; a house for machinery, tools, and farm office; a sugar house, containing grinding mill and evaporators; a dairy house and a foreman's dwelling-house. It is worthy of note that all buildings and improvements upon the college farm, with the exception of one tool-house, together with importations of stock, tools and machinery, and all expenses of its maintenance and direction for purposes of experiment and instruction, have been wholly paid for out of the moiety of an annual fund reduced to but a fraction of the amount appropriated and expended for the maintenance of the same farm before it was transferred to the College.

It requires but a cursory examination of the collections of material, apparatus, and the general equipment for purposes of instruction throughout the several departments of the College to convince the observer, that in all material aspects, at least a full-fledged college, second to few of equal scope and purpose in the western world, has here been planted; while a brief acquaintance with the work going on through the ardor of student and teacher will show how well it has taken root under the wise bounty of a government which, if but a learner of western nations in matters of technical and industrial education, shows at all events striking contrasts with some of these in the readiness and thoroughness with which it adopts the suggestions of a good and well proved example.

FACULTY AND INSTRUCTION.

The faculty of the College, exclusive of teachers in the preparatory department, comprises a president, a professor of botany and chemistry, a professor of agriculture, who is also director of the college farm; a professor of anatomy, hygiene and veterinary science, who conducts also the departments of literature and philosophy; a professor of mathematics, physics and engineering: an instructor in military tactics, and an assistant in both the chemical and mathematical departments. The first five are Americans and the others Japanese. The military instructor is an officer detailed from the regular army of the Empire, which is now organized and equipped after

the French system, and under the instruction of French officers. The system of teaching pursued in the class-room is largely by lectures, while in the laboratory and field the student becomes an apprentice receiving there also oral instruction with illustrations. He is held accountable for the improvement of his opportunities through the merits of his notes, the accuracy of his practice, the system which characterizes his plans and methods, and his general familiarity with the subject matter, all as appearing under the constant direction and scrutiny of his fellow worker—the teacher.

Text books, though allowed in some cases to enable the student to foresee and more fully to comprehend the plan and character of the campaign he is entering upon, are probably used less than in most institutions of the same kind in the United States. A text book, beyond the purpose mentioned, serves mainly the part of an intellectual crutch. By it the lame are materially helped, but the well and strong are positively limited and hindered. Regarding oral instruction, imparted as it should be, challenging the vigilant scrutiny and even cross-questioning of a following of students working under the stimulating example of an energetic, aggressively thoughtful teacher—no system of instruction is better calculated to arouse the *thinking* faculties, which is the supreme object in education, or to make clear the exaltation of principles above facts. How are the interest and native powers of the student thereby enlisted and invigorated!

Among all the problems to which the establishment of technical and industrial schools has given birth, few have entailed more discussion of various degrees of fitness and fairness, than the question of manual labor in agricultural colleges. Experience has shown that the theory of manual instruction may be made the key to an exaction of services unprofitable to the student, for the temporary advantage of the farm treasury; or the contrary danger that it will become a formal exercise kept up to appease a presumed expectation of the public or of the trustees.

The ordinary manual operations of agriculture, the mere handling of farm tools, bears about the same relation to the vocation of intelligent, rational farming that the moulding of pills and the mixing of powders bear to that of medicine; the preparation of colors and the cutting of marble to art; the action of oratory to statesmanship; the art of printing to the profession of literature; or the use of the pick, the forge and the lathe to engineering. All these are important and essential, but a further and higher value in practical instruction in the mechanical details and the drudgery of any vocation lies in acquiring a correct knowledge of the bearings of certain principles upon those operations; in opening the way to suggestions of more rational and effective methods of applying those principles; and in reducing thereby the amount of drudgery and brute force which must be devoted thereto.

The system of manual instruction at the Sapporo College has proved so successful, in its general educational and scientific aims and results, in the personal accountability which it places upon each student, and in the genuine interest stimulated among them, that brief mention of its methods is warranted here, much credit for which is due to the professor of Agriculture, Mr. W. P. Brooks.

During Freshman year the student is made familiar with the ordinary manual operations of the farm, preparatory to the special training in experimental farming to be given during portions of the two succeeding years. To this end a question is proposed to each student at the beginning of the year requiring an experimental solution, and involving accurate observations and more or less scientific knowledge. The student is required to prepare a written statement of a method of procedure which he deems best calculated to solve the problem; or at least to furnish a step toward its solution—the subject and nature of reliable agricultural experiment often requiring a succession of years and a variety of conditions to establish decisive results. These proposed methods are submitted to the professor for criticism and revision. He points out to the student the peculiar merits or faults of his plan, and wherein and wherefore it may be necessary or desirable to modify it in order to secure better results, all correctional exercises of this kind being conducted in the presence of the whole class.

At the opening of the season each student is allotted sufficient land for his purpose, usually about one-fourth of an acre, and is provided with tools, teams, and materials as they are needed. He is required to conduct the cultivation, and to make all necessary observations under the supervision and approval of the professor, doing the work himself. Students are

however allowed to assist each other by exchange of services, different crops and experiments requiring attention at different times.

These experiments are intended to have especial reference in some feature to the agricultural interests of Hokkaido. At the close of the season each student submits a full report of his work and its results, what and how extraneous circumstances may have modified them, and his opinions and conclusions regarding their value and teachings. These are also reviewed by the professor in the class room for the benefit of all the students.

As an exercise in economic farming, the student may further be required to keep an accurate account, debiting it with land rent, materials, labor of teams, assistants and himself, and all other expenses, and crediting it with the value of any permanent improvements made, and of the crops raised. These may be purchased by the college farm at a fair valuation, and the rent of the land, value of supplies and labor of teams furnished charged against him, whereby he may receive pay for his services according to their economic value.

Later in the course, students receive actual practice in the details of farm management and in the direction of workmen, by being appointed in turn, one at a time, for a certain period, associate superintendents of the farm or of certain parts of it. As associates they are required to prepare plans of the farm operations for each succeeding day, which, revised and corrected by their chief, they shall see properly executed.

In addition to its regular educational work the College fills no insignificant part in the general concerns of the local government, through the intimate relations which it maintains with the prime objects of the Kaitakushi. Its voluntary and gratuitous functions of this character are such in truth as to make it a sort of advisory commission in the agricultural, industrial and sanitary interests of the department. From this cause and from the wide fields of public service awaiting its graduates, few institutions of its modest pretensions enjoy the prospect of stamping so unique and marked an impress upon the future history of so large a state or province.

STUDENTS.

Students are admitted upon about the same qualifications of age and previous acquirements that are required in the technical schools of the United States, opportunity for preparation being afforded under foreign—English or American—teachers at the various English preparatory or normal schools which are established in several of the larger cities of the Empire. The number of government cadets is limited to fifty, and all their expenses incurred in the College are defrayed by the government. The general course of instruction extends over four years, after which successful graduates become citizens of Hokkaido, and continue in the service of the Colonial Department for at least five years upon the same terms as other officers of similar rank. Other candidates who are duly qualified may enter as private cadets without limitation of numbers.

Although the College is open alike to all classes and conditions of people under the prescribed qualifications, the students thus far admitted, as in all the higher institutions of the country, are almost wholly from that lower order of nobility formerly known as *Samurai*, or *Kazoku*, the former military followers and retainers of the *daimios* or barons, and wearers of two swords under the old regime. Below these in the social scale were the farmers, from which class one only has been admitted, while of the baronial families one only has likewise gained admission to the College. The old social and political distinctions between the various grades of nobility and craftsmen have been largely obliterated under the restored government of the present Mikado. All classes of society have for several years intermingled, and although the exceptional rights of aristocracy have not all been abrogated, the pretensions of birth are now laughed at.

It is, however, noticeable as an interesting coincidence that our young farmer, solitary in his antecedents, has always maintained a strong second place in the average rank of his class in scholarship, and is even in danger of graduating at the head next month; while he of princely extraction has distinguished himself chiefly as being the prime instigator of the first and only case of profligacy coming to the notice of the president of the College, and was discharged for deficient scholarship at the close of his first term.

So-called "Foreign learning" is, however, much coveted and sought after by the youth of Japan, and the interest and mental activity shown by those who have here entered within its gates have been from the first little less than wonderful. The liberal opportunity which the government has opened to them, con-

joined with a receptive turn of mind and studious habits which are traits of the better classes, have brought to the new line of study, here pursued, their best energies.

The true student, fairly taught, requires no prodding, nor any incitement beyond the legitimate allurements attending his work; and those that seem to await these young men appear to have made them studious to a fault. It has seemed even necessary to urge upon them hospitable entertainment of the fact that the basis of executive power, of triumphant action, of buoyant, impellent force, is largely physical, and that the unflinching labor which almost automatically prosecutes the steadfast purposes of the will, is possible only with an organism of healthful functions. "The acquirements of science may be termed the armor of the mind; but that armor would be worse than useless that cost us all we had and left us nothing to defend."

The future of the new educational institution of this interesting new-born nation, and of their graduates now entering upon the active duties of life in the direct service of the state to which they bring a wealth of patriotism, is full of deep interest and, I trust, of probable success. Children in the civilization they are striving to adopt for their people, inheriting traits of character sometimes in doubtful sympathy with the social and political institutions which they profess to emulate, it will be interesting and instructive to observe how far they shall be able to make the experience and example of other nations answer the fruitful purposes of such self-entailed adversities and struggles as these have been compelled to suffer and take lesson from.

THE OLD AND NEW EDUCATION IN JAPAN.

It has been remarked by many, both natives and foreigners, whose opportunities for observation have covered a larger period than do my own, that Japanese students have shown greater aptitude for learning than is manifested by those of American and European institutions; but that, subsequently, in the active walks of life, they have almost invariably fallen behind the heirs of that practical, progressive, self-asserting spirit which has been the impulse and the fruit of western civilization.

This is said as well, perhaps, chiefly of those sent to American or European colleges, who afterwards returned to the service of their country; and hence cannot be attributed to any comparative inefficiency of institutions founded at home for the promotion of foreign learning. Single-handed against a hundredfold their number, they have frequently carried off honors of the highest rank at foreign institutions.

We need not look far to discern some of the causes which have produced this anomaly. Evidently the principals are these: inherited qualities of mind accruing from peculiar systems of learning and conditions of society which have existed for ages; and the influence of environment upon powers of application and habits of thought.

A profound regard for learning in old Japan during many centuries had left unlearned the most potent laws and principles of nature, of society, of human capacity. Utter dependence upon, and even veneration of, the ancient classics of equally inert China, as the fount of all knowledge, gave no impulse to rise above its source. The time necessary to master the formidable array of characters which were the sole weapons of intellectual warfare, left few men enough of strength or years to make higher conquests. While a few arts were carried to a wonderful degree of perfection, the practical resources of design and invention were strangely neglected. Multiple centers of dominion necessarily co-existed with the usurpation of governmental authority, rendering the state impotent to promote the general welfare. The shifting wealth and power of barons and commanders confirmed the poverty and helplessness of the masses. The maintenance of a large fraction of the people—the ablest of the nation—in unproductive plenty, subjected the remainder to hardship and poverty.

The learning of Japan in these times, voluminous but inert, was such as to cultivate the memory to the highest degree and to neglect the powers of thought. Her arts and industries, the same for ages, were productive of a remarkable degree of imitative power and hand skill, at the expense of the faculties for invention and practical design. The helpless masses, in yielding their substance to the powerful, learned to be content with a mere life-sustaining pittance. The powerful, whose strength was in the subjection of the weak, planted deep the root of helplessness in themselves.

Now, fortunately, the entire regime is changed; but the seeds of the past cannot be eradicated at once. Traits which have been ages in the making must need

generations in the breaking.

Memory is imitative. It is the agent of all primary instruction, enabling the learner to follow readily where others have led. Original thought is progressive, and makes the possessor a leader where there be few who can even follow. The thinker is a poor copyist, though possessed of creative and life-giving powers. The imitator is incapable of surpassing his model just in proportion to the singleness and perfection of his power to equal it. The one makes leaders; the other, only followers.

An excellent memory will enable a student to outshine one who must stamp every fact and principle with the seal of perfect comprehension e'er it can claim a place in the archives of the mind, so long as the work involved consists in taking in the elements of truth as commonly taught. But when the exigencies of life call for their use, not in the few elemental forms in which they were stored away, but by combination and permutation to be applied to an infinity of cases, not one of which, perhaps, can the best memory recall or indentify, then are their powers displayed in a widely different light.

So the habit and faculty of adapting and applying in life even the simple facts which come to one who never saw the interior of college walls, often enable him to outstrip others who have received the best instruction the institutions of the world afford; and he is accredited with being "self-made," when in truth he is indebted, beyond the average of his fellows, to the Creator of all men.

Now in view of the peculiar traits which have descended to the present generation of this oriental race, if those systems of scientific and practical instruction which have been so widely adopted in the higher institutions of the western world rest upon true principles, still more are they meet for the needs of Japan.

The deductions of science are both logical and practical; and the value of its study as a mental discipline, far from being impaired when allied with processes for deducting its applications, should be increased. The logical connection between facts and principles, the subordinate and paramount in learning, ought always to be clearly maintained; and their application to the general concerns of life serves not only to render them of double and ten-fold the service to man, but fixes them more securely in the mind. To know *how* is to be a peer in a single art. To know *wherefore* is to be a master in all its own and dependent possibilities. Knowledge without thought is impotent to go beyond itself; but thought and knowledge have unlimited resources.

SORGHUM SONG.

Tune—Gee, Whoa Dobbin.

Come listen to me, it will do you no harm,
And I'll tell you a tale of the old college farm;
And while it is true that from milk comes the cream,
It proves not that all things are just what they seem.

Cho.—Syrup from sorghum, syrup from sorghum,
Syrup from sorghum, the new amber cane,
Sugar from sorghum, sugar from sorghum,
Sugar from sorghum they could not make grain.

For long had the faculty had on the brain
The raising of sorghum—the new amber cane,
And really believed that for practical use
Cane sugar could make from its saccharine juice!

Cho.

They planted and nourished and tended with care
The new amber-cane, a specimen rare.
It ripened; they cut it, and this was their plan:
To crush and to boil in a great shallow pan.

Cho.

They boiled it all day and they boiled it all night,
But grains of cane sugar kept out of their sight.
For griddle cake syrup they thought it of use,
So they barreled up closely the boiled sorghum juice.

Cho.

But when Father Baker, one bright Christmas morn,
Came up to the college his task to perform,
He fell in a rage and a fit of despair
And wished that in youth he had learned how to swear.

Cho.

For over the chapel, the walls and the floor,
All over the clock and all over the door,
Some rascally villian of no earthly use
Had poured the boiled sorghum—the sweet sorghum juice.

Cho.

The faculty raged, and threatened and swore,
When they saw the boiled sorghum poured over the floor,
And while in their anger they made a decree
That were the imp caught he should drown in the sea.

Cho.

And all that came out of the faculty's dream
Of making cane sugar, the great sorghum scheme,
Was purely nothing of no earthly use,
And the story you have of the boiled sorghum juice.

THE NEW ERA.

ORATION DELIVERED AT THE BOSTON UNIVERSITY, COMMENCEMENT, JUNE 2, 1880, BY WM. G. LEE.

In considering the march of civilization, and the marvelous results which have been secured for the elevation and happiness of mankind, we find, far superior to the wonders of discovery and invention and requisite to all improvement, the progress of education. We may not perceive so striking results in this direction when we consider the advanced state of education among the ancient Greeks and the world-renowned schools of the Arabs; but when we compare the learning and culture of those nations, retricted to the wealthy and powerful, with the growth and development of modern science and, above all, with the universal education of our own day and our own land, we begin to comprehend the importance of its progress. While we can never cease to admire the splendors of classic Greece, and must always hold in highest reverence the glorious past of the more modern colleges and universities of Europe, still it is in the new era teeming with questions of the most vital importance to the world's progress that our interests are centered.

Within the past two centuries we see the departments of the older Universities gradually increasing in kind and number and assuming a more special character, thus promoting a wider diffusion of higher education. Gradually, the classics, long held paramount to every other study in a college training, are yielding their claim of supremacy to the equality of science. And with the development of the natural sciences and their application to the arts of life, we find a growing demand for more thorough training and culture in the industrial pursuits. On every hand we see colleges and schools of high order with liberal courses of instruction and elaborate equipments and apparatus for preparation in the various vocations of life.

Most recent of all developments in this direction is agricultural science and education. Inversely as its importance has been its progress. Although the wisest statesmen of the world have always recognized the importance of a high state of agriculture to the prosperity of nations, yet agricultural educatoin is of comparatively recent origin. Not until the earth—in many of the older countries—had yielded with her bounteous crops her original fertility, and the discoveries in the world of science had opened to the student a most fruitful field for investigation, was the subject of agricultural education agitated. And now the development of the unlimited resources of our own country demands, with every pulsation of the great arteries of commerce, throbbing with the products of our soil, the intelligence and skill of thoroughly educated men.

Already, the most enlightened countries of Europe have begun to look upon this subject as of the most vital importance, and although it is scarcely a century since the first steps were taken in the old world towards reducing the principles of agriculture to a scientific basis, and establishing schools for agricultural education, yet the germs then scattered, outgrowing all opposition and prejudice, have developed into a most important system of education; and to-day no less than twelve hundred agricultural schools and colleges under government patronage testify to the importance attached to this subject by the powers of Europe. In Germany alone we find some twenty-eight or thirty agricultural universities, and, tributary to these, numerous preparatory schools and seminaries. Standing, as she does, in the foremost ranks of the educational world, she places agricultural education in the highest order.

The first active measures in this direction in our country were taken in 1849, when President Hitchcock of Amherst College was commissioned by the State of Massachusetts to investigate the methods of agricultural instruction in Europe. In his report to the Legislature he recommended that Massachusetts "lose no time in taking hold of agricultural education efficiently and liberally," and further recommended, for the needs of this country, institutions of a high character, with large bodies of instructors and amply equipped with appropriate cabinets and apparatus; and that the enterprise should be started with a high standard in view, for to aim lower would prove "contemptible, or at least a failure." But little was accomplished, however, until another decade had passed, when, amid the turmoil of civil war, the general government recognized the importance of this subject, and granted to each loyal state an amount of land equal to thirty thousand acres for each of her senators and representatives in Congress, as an endow-

ment for at least one college whose leading object was to be, "without excluding other classical and scientific studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life."

Thus the United States, though dilatory in this movement, when she did act, verified her reputation as a progressive nation, acknowledging in this law the importance of a thoroughly educated citizenship for the highest perfection of a republican form of government, and in this grand scheme for the liberal education of her industrial classes, aimed to elevate labor to its true dignity. The system thus favorably inaugurated, though it has had to encounter the usual obstacles to progress, though ignorance and indifference have retarded its usefulness, has well repaid the expense it has occasioned, and has proved the wisdom of its adoption.

Massachusetts, always bearing a prominent part in the educational interests of our country, has performed no unimportant work in the promotion of agricultural science. Her State College, though meeting with bitter opposition, has already accomplished results, which, in the opinion of Agassiz, that most eminent scholar and teacher, have secured for her a place among the scientific institutions of the world. The hostility shown to this college during the past year is an unpleasant stain upon the reputation of that state priding herself as the center of the learning and the culture of our country; but hostility is preferable to indifference. The darkest hour of her history is past, and in the future of the new era we behold the realization of the glorious conceptions of her founders in her position, not as a rival, for hers is a different mission, but as an equal to the best institutions of our land.

SKETCH OF A BICYCLE TRIP.

Having read of many journeys through Europe on foot and becoming quite interested in that mode of travel, a good pedestrian tour was often thought of; but believing that bicycles offered the advantage of covering twice as much ground, besides seeing the countries and places of interest in about the same manner, we readily accepted them as a means of conveyance.

Early in the Spring of 1879, our plans were formed and about the first of June we crossed the Atlantic, but not till July were our machines and equipments ready for starting. Our bicycles were "Xtraordinary Challenges," and they performed their work well, not giving their riders a single bad fall upon the whole trip.

Strange as it may seem, London, the great Metropolis, with its hosts of bicycle riders and makers, cannot boast of a single riding-school fit to learn in. We were taught the feats of mounting and dismounting in the basement of Singer's store, and after having a try upon Northumberland Avenue, decided to start and trust to the excellent safety qualities of our machines.

Leaving London late in the afternoon and having been obliged to walk a great part of the way, we arrived at Brentford on its outskirts towards evening. It was thought best to stop for the night here and make an early start the next morning.

Early in the morning we left our quarters and wheeled along slowly, for we had not yet become masters of our steeds. The roads were heavy and a hard wind came up to increase our work.

We passed through several small towns and villages, whose chief characteristic was a narrow street with very ancient appearing structures, and many quaint taverns with such names as—The Red Cow, Black Boy, White Horse, Red Lion, etc. About noon we entered Maidenhead where we stopped, and enjoyed a dinner of the famous English chops, to which we did justice as well as to everything else placed before us.

In the afternoon continuing our way we reached Theil at evening, our resting place for the night. Thirty-eight miles had been accomplished and it proved a hard day's work, for besides lack of experience, we had wet roads and head winds to contend against. I was rather discouraged and my faith in the capabilities of the bicycle was greatly weakened; but afterwards when riding over the same roads with ease and comfort, recalling the hard trials and great exertions we made on our first starting out, I could not help but conclude that the beginners' "lot is not a happy one."

The next day we covered about fifty-two miles, and

on the following morning our bicycle grinders were sadly out of sorts, reminding us that they should be treated better as the work was entirely new to them. However, to Bristol, our point of embarkation for Waterford, Ireland, the ride being short and over a fine road was soon accomplished.

We had hardly yet become accustomed to our new work and so a rest in the form of a sea voyage was quite welcome. We entered Bristol at noon, looked through the city and then placed our machines aboard the steamship ready to sail.

Our ride had been over the famous one hundred mile racing road from London to Bath, and but few very steep hills were encountered. The country presented a beautiful appearance. On both sides were grassy slopes or extensive fields of wheat or other cultivated crops. The Duke of Marlborough's park was the only heavily wooded part passed through, and in its open spots deer were seen grazing.

Leaving the boat which arrived late in the morning at Waterford, we were soon wheeling along over the Cork road, and the next day arrived in the city peculiarly noted.

The country was wild and reminded one very much of New England. The dwellings along the road were built of mud and stone with one and sometimes two very small windows, and the roofs were thatched with straw. The people to correspond were poorly dressed and looked shiftless and lazy. Many of the people seemed to own little donkeys which they used for drawing things to market, and when not at work allowed to pick up a living on the road side. They probably fared as hard as any domestic animal could and keep alive.

After doing Cork, which contained but little to interest us, we started out over the poorest roads yet met with. For almost two days the rain had incessantly poured down, thus leaving the roads in an exceedingly bad state for bicycling. On the following day, however, upon reaching the highlands everything was changed; the roads were dry and on both sides were the bleak rocky tops of mountains and hills. The bare and desolate appearing rocky mountains and hills presenting a strange contrast to the distant valleys below.

After surmounting the highest point of land between Cork and Killarney, the ride was over a hard smooth and slightly descending road so that a speed of twelve miles an hour was easily kept up. It was a very pleasant run. Below was a rushing mountain stream and above the wild desolate peaks.

North from Killarney to Dublin the roads were wet and heavy on account of recent rains, but at many places good side paths were found offering quite an agreeable change. From Marylborough to Dublin, about sixty miles, smooth side paths are found almost the entire way, making the ride a very pleasant one.

As we continued our way north from Killarney, the country and its inhabitants seemed to change, the fields were better tilled, the houses and farms appeared more comfortable and better cared for, and the people were apparently happier.

Taking the boat at Dublin for Greenock, Scotland, we arrived after a night's sail and crossing the Clyde to Dumbarton, we wheeled rapidly along to the landing pier of the Loch Lomond boats and soon found ourselves gliding swiftly and quietly over the smooth waters of the "Pride of Scottish lakes" enjoying very much the surrounding scenery.

At Inversnaid we debarked, climbed the hill which led down to the pier, then mounting our steeds rolled merrily over the road to Loch Katrine, made famous by Scott, in his "Lady of the Lake." Another pleasant sail brought us to the entrance of the Trossachs, a ravine about one mile long cutting through the hills which surround the lake. We traveled as far as Callendar before dark, and on the next day reached Edinburgh.

The roads we passed over in our short trip through Scotland, were hard and pretty smooth, making the riding except on up grades easy and comfortable.

After stopping two days at Edinburgh, and visiting many places of great interest, we again embarked on a voyage across the North Sea to Rotterdam, and thence by R. R. to Antwerp. From Antwerp we again took to our bicycles, but after tugging hard for nearly a day over the rough paved roads of Belgium we decided that all roads were not suited for bicyles, and at Malines made use of a R. R.

A few days later found us in Cologne having passed through Liege, Vewiers and Aix la Chapelle, encountering many rough uncomfortable paved highways, especially the one from Aix la Chapelle to Cologne, which had but few side paths to change the monotony and slowness of our travel. Indeed, walking in many places was preferable to riding over these

pavements, and about as much ground could be covered with more ease.

The Rhine from Cologne to Mayence was ascended by boat, that we might have a better chance to view its beautiful scenery and its numerous ruins, towers and castles.

From Mayence, having made a short run to Wiesbaden and return, we proceeded along the border of the Rhine over a fine road, but rather dusty, under a hot scorching sun, which seemed to blaze as fierce as any ever did in New England. However, with a liberal use of the noted German beverages we managed to keep as cool as circumstances would permit.

We dined at Worms, visited a few places of interest, then on our steeds wheeled silently over the roads reaching Mannheim in the evening.

On account of heavy rains during the night, we started late in the morning, and though the roads were wet the air was cool, making it quite pleasant riding. At noon we entered Heidelburg beautifully situated between two prominent headlands. Leaving our machines at a station we wandered up to see the ruins of the castle and its curiosities. The magnificent ruins with their peculiar surroundings was an impressive sight, one which time cannot easily efface.

From Heidelburg we traveled to Baden and thence to Bühl and Strasburg.

In Germany the roads were fine, the best we had passed over, not a single dismount being necessary unless for a change of motion. On our way but few hills were encountered which could not easily be mounted. The country on both sides of the road was cut up in grass land cultivated fields or vineyards.

Many women were seen at work in the fields, cows were used to draw wagons, and in the towns and cities many little wagons might be seen drawn by a man or a woman, and one or two dogs hitched to the axle tugging away giving their assistance. Soldiers were met with almost every day, perhaps laying a pontoon bridge across the Rhine, marching to work with shovels and picks or in full uniform training. Students were also met with, off on pedestrian tours.

After doing Strasburg we were again soon in the saddle gliding toward Paris "the most beautiful city," through a fine country and mostly over good roads. Our stay at Paris was not "too long but just long enough," to impress us with its magnificence, rare treasures and wonders, when again rolling toward Dieppe two were bicyclers.

Our sea voyage was short and quiet, and early in the morning we gazed on Albion's chalky cliffs. At New Haven we landed, and from here to London was a remarkably good road hard and with but few hills of any account.

From London again we departed riding through the crowded streets with ease, and thinking of the hard trials we had on the beginning of our journey. The greater part of the way to Liverpool the roads were fine, but I should hardly consider them equal to those in Germany. Still about Warwick and Coventry the surroundings were exceedingly pleasant and the roads hard and smooth. Our ride in this vicinity would have been the pleasantest of the trip, if it were not for rains which made it rather uncomfortable.

ODE.

All down the line of prehistoric age,
On chiseled rock and polished marble page,
In letters plain, outlined with greatest care,
And oft with gold bedecked, or wrought with jewels rare,
The names of knights, of kings, of heroes brave,
The poet's fame, the deeds of prince and slave,
Have all been carved and that in every land,
With studied skill and bold artistic hand.
No king yet ruled who showed a thirst for blood,
No prince yet lived who spread his realm with good,
But what some hand of friend or hated foe,
Has left inscribed on tablets high or low
Their names, extolled or magnified by verse,
Or 'round their heads have twined a wreath with many a curse.
So we have met to-day beneath a sky serene,
To place our name in moulded bronze upon this college green.
A name we love for 'round it hang sweet memories of the past,
A name we write as none can write but those who here are classed:
'Tis not a name that nations laud, or speak with jeering tongue,
No monarchs hold it reverently, its praise no bard has sung,
It brings to mind no warrior chief, no stately prince, no slave,
It stands upon no royal tomb, it marks no silent grave,
No Spartan bore it on his shield at old Thermopylae,
It graced no Grecian helmet, no breastplate on the sea,
'Twas not the cry at Marathon, that widespread gory plain,
'Twas not the Roman victor's shout among the myriad slain.
But here among these quiet vales New England gave it birth,

And none but those who guard this name can tell its natural worth.
And yet 'tis one that all might wish to claim as many do,
This name we love, this name we write is naught but Eighty-Two.
It stands to-day in bold relief among those honored folds.
Who claims that he from this our name his due respect withholds?
Is it not worthy of a place upon the noble list
Of names inwrought with purest gold, with pearl and amethyst?
Methinks I hear from every glen, from every hillside green,
From every range of granite rock and lowly vale between,
From every meadow sweet with bloom and every murmuring stream,
From every feathered warbler's throat, from every sunny beam.
A voice, like some far wandering strain of some sweet zephyr's song—
To Grecian maid's Æolian harp no sweeter strains belong.
And to mine ear this message brings, this message strong and true:
"Thou shoulds't have a higher rank, most worthy Eighty-Two."
But if we would, we cannot carve this glorious name in gold,
Nor can we set around it pearls or rubies, wealth untold.
But here to-day we plant a fount beneath the heavenly blue,
And on it carve one simple word, the emblem, '82.
Behold that fount, majestic fount, proud of the name it bears,
How like some piece of Grecian art its graceful form appears.
See how it throws yon limpid stream like some fair child at play.
How it reflects each solar gleam a bright prismatic ray.
Play on, O fount, O graceful fount, while ceaseless ages roll.
And note each swiftly flying year on time's enduring scroll.
Remember well these leafy trees, each marks a hallowed spot,
Where youthful hands once planted them to grow when they were not.
Remember that they bear the names of many a hero gone,
Remember that they bear the fruit of many a victory won.
But may they bow to thee, O fount, like one submissive, meek.
And at thy cool, refreshing bowl new strength and vigor seek.
And if a feathered songster comes to trill upon the tree,
Scorn not his song, his sweetest song is sung to none but thee:
And if he comes to sip a drop at thy refreshing spring,
Do not withhold thy giving hand, but clearest droplets bring.
And e'en the bee, the busy bee, that fills the dainty comb,
Scorn not, but let him sip the sweet from flowers about thy home.
And when we leave these happy scenes and say our last good byes,
And others come to bear the load with trembling steps and sighs,
Bid them press on, what some have done their feeble ranks can do,
And then unveil to them our name, the emblem '82.
Keep well thy charge for o'er thy head a glorious ensign waves,
And none who stand beneath that flag are called monarchial slaves.
We leave thee in its care, O fount, for all the years to come,
That it may keep thee from all harm in this old college home.
And thou that waved at Mission Ridge, at Southern Fredericktown,
Thou that o'er Antietam waved and bloody Wilmington,
Thou that tore the barriers down at Georgia's deadly pen,
Thou that turned the rusty key at Libby's fatal den,
Thou that broke the shackles strong and set the bondsman free,
Thou to whom all nations bow on every land and sea,
Wave on, and guard this crystal fount we give to thee this day,
Preserve it from the ruthless hand, from blighting, sad decay.
Wave on old flag as thou hast waved in all thy wonted pride,
Herald the name of our dear state to nations far and wide.
How many hearts beat strong for thee in this our land to-day,
How many loved ones sleep for thee, our blue by southern gray.
They sleep beneath the south-land sky, on hillside, meadow, plain,
No tempest breaks their quiet rest beneath the roaring main.
No polished slab marks plain the spot where noble heroes fell,
No monuments are planted there, their honored names to tell;
They stood 'mid flame and battle smoke, they asked no honored grave,
They fought for home, for mother, wife, and native land to save.
And when they saw thee wave on high, they thought it far more sweet
To die and claim thee, dear old flag, to be their winding sheet.
Wave on old flag, our starry flag, beneath the heavenly blue,
Watch o'er this fount that it may guard the emblem '82.

PERSONAL.

'71.

WM. WHEELER has resigned the presidency of the Sapporo Agricultural College, settled in Concord, Mass., and has re-opened an office as civil engineer in Boston.

F. W. Hawley has settled upon the old farm in Hadley.

L. A. Nichols has taken unto himself a wife, and accepted the position of chief engineer of the Atchison, Topeka, and Santa Fé railroad, with an office in the latter city.

W. H. Bowker has purchased the old Ellsworth farm in Barre as a summer residence, and will conduct a private experimental farm.

'72.

Dr. J. C. Cutter does not expect to renew his contract with the Japanese government, but intends to return home in the fall and resume the practice of his profession.

J. W. Clark presides over the class work department at the college.

'73.

S. S. Warner having returned from his California tour is again farming at Northampton.

D. P. Penhallow has resigned his professorship in Japan, and at last accounts was in Tokio on his way home.

'74.

E. H. Libby was unsuccessful with his new paper, *Land and Home*. The only trouble was, he made a better journal than the people demanded.

A. W. Dickinson, who was assistant clerk of the last New Jersey Legislature, has just been admitted to the bar.

J. A. Hobbs is the owner of a large ranch in Bloomington, Colorado, stocked with ten thousand sheep. He was recently offered the Republican nomination for State Senator, but declined the honor and married a wife instead.

'75

As a unit is terribly grieved that its sacred rights were interfered with to the extent of removing its class tree to make room for the new fountain.

Dr. J. F. Winchester delivered the last course of lectures upon Veterinary Science, and gave satisfaction to all concerned, indeed stands on a par with either of his distinguished predecessors.

A. A. Southwick is superintendent of the "Winning Farm," which is acquiring so wide a reputation through the experiments with ensilage there conducted.

'76.

T. E. Smith and W. H. Porter are the newly married men of '76. The former is at present instructor in elocution at the M. A. C., and has been doing his best to overcome the results of insufficient instruction in this department during the past year.

C. W. McConnell is a full fledged dentist in Providence, R. I.

J. E. Williams has become sole editor and proprietor of the Amherst *Record*, which is improving under his management into a first-class journal, and The Cycle, which he prints, speaks for itself.

W. G. Wetmore graduated with high honors at the Columbia Medical College, and is now one of the surgeons at St. Lukes Hospital in New York.

W. A. Macleod is a member of the Suffolk Bar, with an office at 33 School street, Boston.

'77.

J. K. Mills was in town during last fall term, but after a stay of a few days returned to Leadville, Colorado.

D. H. Benson and wife are in town; he is still connected with the Bradley Fertilizer Co. of Boston.

Joseph Wyman was taken with the "Texas fever" and is at present prospecting in the "Lone Star State."

'78.

X. Y. Clark, who went to Germany to continue his zoölogical studies, was compelled to return on account of sickness, and is stopping at his home in Amherst. His health has nearly returned.

Lockwood Myrick has graduated from the law office of Judge E. R. Hoar, and has hung out his shingle in Fort Worth, Texas.

C. S. Howe is principal of the Albuerque Academy, New Mexico.

H. G. H. Koch has finished his agricultural and chemical studies at Göttingen and will return to this country in September to put his European acquirements into practice on an American farm.

E. C. Choate has purchased the celebrated "Peeters farm" in Southboro, Mass., and enjoys the distinction of possessing one of the finest estates in the state.

'79.

W. A. Sherman has completed his first session at the American Veterinary College.

R. S. Dickinson owns and conducts a large grain farm in Keokuk, Ill.

S. B. Green will leave the farm, for the present at least, and enter the next class in the B. U. Law School. During the last year he very successfully

managed the famous "Vine Hill Farm" at West Hartford, Ct.

H. E. B. Waldron has left the office of the Secretary of the Board of Agriculture and will go to farming near New Bedford.

R. W. Swan is a member of the middle class at the Harvard Medical School, laboring hard at a work he enjoys.

G. P. Smith has become a progressive farmer at Sunderland.

THE FIRST AGGIE REGATTA.

The patriotism which impels men to offer home, fortune and life upon the altar of their country, which bares their breasts to receive the blow aimed at her life, and after the conflict is won keeps fresh the memories of battles fought, and inspires the tribute rendered to heroes fallen, finds kindred sentiment in the feeling which stimulates the college student to strive for the honor of alma mater, and cherish traditions celebrating the deeds of his predecessors. As every patriotic American turns with reverence towards the field of York town, or the plains of Saratoga, so every son of Cornell points with pride to the waters of Saratoga Lake, and every Aggie grows enthusiastic at the mention of Ingleside. Every opportunity is embraced for perpetuating the glory of each dearly won national victory; likewise, no occasion should be omitted for handing down from class to class the remembrance of each hotly contested inter-collegiate struggle. It is with this thought in mind that we venture to repeat the story of an Aggie victory, as it was handed down to us by those who have gone before.

Every scion of the M. A. C. is acquainted with the tale of Ingleside, and has felt his nerves tingle with excitement while listening to some anecdote of the great regatta. So often has the story been told to the exclusion of that of the previous and lesser victory that memories of it are almost forgotten; and we believe that not a few Aggies of to-day are even unaware of the fact that the boys who made the best time on record at Ingleside were not the first crew who carried the maroon and white across the line in view of a competitor; but that a previous crew had existed, and an earlier victory been won.

Interest in boating had been on the increase in our colleges for several years, but the epidemic had kept aloof from the M. A. C. till it was introduced in a singular way. Amherst College had for some time boasted an active navy and had her crew defeated in the Worcester regatta of '69; believing her want of success was in part due to a lack of sufficient practical training, she conceived the idea of endeavoring to induce the Aggies to form a crew, from which she might acquire practice and laurels. The matter was accordingly set in motion and officers of the Amherst association appeared before a mass meeting of our students and expatiated upon the pleasures and advantages of collegiate rowing. The movement thus set in motion resulted in the formation of the M. A. C. Rowing Association, and the selection of a six-oared crew. No sooner had the men been chosen than they received a challenge from the valorous Amherst crew, and *three weeks afterwards* occurred the race. The day selected was the 5th of November, and the course was upon the Connecticut river at Hatfield, three miles with a turn. The men who there had the honor of first wearing Aggie colors upon the water were: F. C. Eldred, (stroke) G. A. Duncan, G. H. Allen, Geo. Leonard, H. B. Simpson, and Ned Hardy (bow).

On the appointed afternoon both banks of the river were lined with eager spectators. The "Intellects" were arrogantly confident, while the Aggies were quietly hopeful. The river was beautifully smooth, offering every promise for a well contested race. The advantage of position, experience and time of training were all with Amherst, and for a short distance the slight advance of the Amherst boat gave the wearers of the purple and white an opportunity to become hilariously joyful, but as the gap between the contesting crews gradually grew less and less till it finally disappeared altogether, Amherst faces rapidly lengthened till they assumed the typical sanctimonious air. And when at the turning stake the Aggies had placed a clear stretch of several yards between them and their opponents, the physiognomies of Amherst's sons were indicative of blank astonishment; and as the gap gradually increased till the Aggies crossed the line ten boat lengths ahead of their doughty adversaries, intellectual incredulity was superseded by utter disgust. And as the Amherst colors came trailing down the course far behind the maroon and white, Aggies fairly wild with joy clasped each other on the bank, while cheer after cheer for the victorious crew rose

from a hundred Aggie throats.

The crew which was to have afforded such excellent facilities for the demonstration of "Intellectual" superiority was never again challenged by an Amherst adversary.

Though this victory over Amherst was not in itself so great an achievement, its ultimate results were of vast importance not only to the M. A. C. but to American boating, for it led to the formation of the Ingleside crew, which on the 21st of the next July overwhelmingly defeated Harvard and Brown, proving that the magenta was not invincible, and leading to unprecedented interest in inter-collegiate boating, which had for years been confined to the annual contest for aquatic superiority between Harvard and Yale. Of the four crews which have borne the maroon and white upon the water all won honorable position at the finish, and two were rewarded with deserved success.

Though the fever for boating finally wore itself away at the M. A. C., as at all other inland colleges, Aggies should ever remember that their colors led the magenta, the blue, the brown, the green, the white, the purple and white, the purple, and other emblems less easily recognized over many a mile of oar beaten water. That the result of no inter-collegiate struggle was ever hailed with such universal enthusiasm as that in which the farmer boys from the hills of Massachusetts proved their superiority to the "Brahmin caste" of Harvard, and broke the shield of the crimson Bois Guilbert.

ORATION.

DELIVERED AT THE DEDICATION OF CLASS FOUNTAIN.

BY F. G. MAY, '82.

We are gathered here this afternoon, classmates and friends, to celebrate one of the longest-to-be-remembered events in our college course; namely, the dedication of the fountain, the emblem of the class of 1882, and while here let us consider what a college class emblem should be in its deepest and truest meaning. Should it be something so very elaborate and costly that it should attract us on account of its pecuniary value, or should it be something so finely and exquisitely wrought that it fastens our deepest admiration upon it? No! the simplest as well as the most elaborate device will serve, for an emblem is "a picture representing one thing to the eye but another to the imagination." So when we look at our emblem, now as well as in future years, our eyes remain fixed upon it but our thoughts immediately revert from it and wander back into those college days long gone by, days of hard work, of sorrow, of sad disappointment and others of happiness, of pleasure and of bright anticipation. And when later we shall stand in the shade of some of these glorious elms, gazing at the clear water and being refreshed by the sound of its fall, how the memories of our Alma Mater will rush back upon us; while we think of reverenced professors, beloved chums and intimate friends, many of whom are scattered over this broad earth and of some who have gone never to return; and then, too, the recollection of all the numerous little daily events and occurrences, of no consequence or importance to any one but ourselves. How sweet these memories will be!

But, to my mind, there should be more to an emblem than even this; there should be some resemblance or connection between it and the picture it brings to mind; and in this instance we hope and think that the men of the class of '82 have chosen *the* fit and appropriate device to stand for them after they are scattered and gone. Is not the fountain the type of brilliancy, of purity and of activity? And, dear classmates, if in the time which has past we have not shown all these qualities, if we have been anything but brilliant, anything but pure, anything but active, let us now come out, turn over the new leaf, and show that in the two years of our course to come we can be and will be an honor to ourselves, our class and to our Alma Mater.

We now have an added incentive to point out the way and hold us up to our duty, such as we never have had before; for as the fountain throws its stream upward and never ceasing, so may our course be ever upward and onward until our last hour, when we shall reflect credit and honor upon the beloved institution, which will be so much her due, by having it said, with truth, of each one of us, "the world is so much the better because he lived in it, and the foundation of his good work was laid at the Massachusetts Agricultural College."

ITEMS.

Mowing was begun on the 8th.

Several members of '82 have been making a survey of the entire farm.

White pants look well on drill, but they will never make up for lack of training.

The heart of the Aggie rejoiceth at the improvements, though small, which are being made in the walks on Pleasant street.

Photographs were taken, last week, of the drum corps, the orchestra, and '82's fountain.

A Junior wants to know if, when a calf is two years old, it has two front teeth on *each jaw?*

The Seniors took their written examination in Agriculture on the 15th, and then began their vacation.

The "Anti-Dirt Association" was short-lived. One good wash in the Connecticut is all they accomplished.

A student who works in the Lab. accuses another of going to town after Potassium Iodide—that is to say K. I.

'81 spent their last hours of class work in sampling the different varieties of strawberries now under cultivation.

We have our President's word for it, that the barn is now kept in better order than ever before. But still, he says, it might be better.

Several sinners have been "excommunicated" by the authorities of the Christian Union, for allowing their unpaid taxes to assume improper proportions.

Much dissatisfaction has been expressed in regard to the marks in Geology. It is to be hoped that there will be no cause of complaint in the marks in Zoölogy this term.

Some one, probably of the muckers who infest the country hereabouts, has brought down the curses of the Rifle Association upon his head by destroying or mutilating their target and other pit property.

The graduates from the various departments of Boston University this year number as follows: Agriculture 7, Liberal Arts 17, Theology and Law 34, Medicine 36, Oratory 10, All Sciences 4; total, 116.

INTELLECT to Expressman.—"Has my bicycle come yet?"

EXPRESSMAN.—"Let's see, are you an Agricultural student?"

INTELLECT.—"Blankety dash! I hope not!"

EXPRESSMAN.—Well, sonny, you needn't feel so bad about it. I've seen plenty of Aggies better looking than you are."

The correspondent of the *Homestead* was so elated at the arrival of his new machine, that he allowed his childish exultation to get the better of him while he wrote the item about bicycles. He says, "Next fall we will have a good club and then let the 'Intellects' look out for their laurels at the races." If he will promise to win the laurels himself, all right. But it would be well for him to learn to ride before he talks of racing.

The *Amherst Student* complains of the Aggies for applauding errors made by the home team in the ball game at Blake Field, and calls upon us to show "fair play and the commonest instincts of gentlemen." And this appeal is made at the end of one of the most insulting and ungentlemanly slurs upon the character of our students that have yet appeared in that paper. The editor refers to our "aggrieved state" at not being made a tail to their kite, and hints at a fancied practice of "crawling under the fence." In the first instance, he only displays his ignorance and conceit, but in the second, he offers an uncalled for and unwarranted insult. But how can the students of Amherst College hope to command the respect of those whom they insult and contemn on all occasions? Have they ever set us an example of "fair play?" Was it their "gentlemanly instincts" which made it necessary for some one to request them, at the Harvard game, not to applaud the errors of the visiting team? Surely this is the beam in their own eye. We would quote from an article in the same issue of the *Student*, written in reply to certain charges of trickery on the part of the Amherst nine, and ask, "Is the Editor enjoying good health? Is his appetite good and his mental vision clear? We would infer that he was suffering from an acute attack of brain fever, superinduced by over excitement in the search for something to satisfy the demands of the printer. His imagination at least has grown abnormally vivid." The editor cannot object to this as a reply, for it is in his own words and exemplifies the "gentlemanly instinct" with which he is so richly endowed.

THE CYCLE

SUPPLEMENT.

MASS. AGRICULTURAL COLLEGE, JUNE 23, 1880.

CONTAINING AN ACCOUNT OF THE EXERCISES OF COMMENCEMENT WEEK, LIST OF PRIZES, ETC.

COMMENCEMENT EXERCISES.

Like some way-farer who has been absent from his early home wandering in foreign lands, exposed to hardships and privations, but now as he returns, care-worn and weary, and beholds from a distance the little brown cottage covered with woodbine, and around it green fields with sportive flocks and lowing herds, scenes of his boyish sports, thoughts of happier days come back to him, a gleam of joy lights up his countenance and he is led to exclaim, "my pilgrimage is nearly over, there I shall find rest and shelter." So does the tired student, weary of books and the dull routine of college life, look forward to the day when he shall again return to his paternal roof, receive the hearty welcome of dear friends, enjoy undisturbed repose on a well-made bed, and experience the delightful sensation produced by a good "square meal."

How often do we hear it said by classmates and fellow students, "I shall be glad when my college course is over." There is, to be sure, in every ambitious youth a desire to start out and be of some use in the world, but if he thinks the hardest victories to be won are with books, he is sadly mistaken; there are greater battles to be fought, greater difficulties to overcome, and greater responsibilities to carry. To one unacquainted with the mysterious ways of the world, all things seem to present a fascinating appearance; but when he is thrown out upon its cold charities and is called upon to play his part in the great drama, all the fascinating visions disappear and he stands face to face with the stern realities of life.

The common saying that "the happiest part of one's life is spent at school" must have been forgotten at our college home; for when Monday morning ushered in the glad tidings of Commencement week, it found the Seniors jubilant because their college days were so nearly over, while the members of the lower classes were only too willing to express the wish that the anniversary of their graduation were as near at hand.

Monday forenoon concluded the regular examinations with the exception of the Senior examination in agriculture for the Grinnell prizes.

The Farnsworth Prize speaking took place in College Chapel on Monday evening, exercises commencing at eight o'clock. The speakers were, Freshmen: David O. Nourse, Henry W. Owen, Charles T. Conger, Homer J. Wheeler; Sophomores: George D. Howe, Samuel C. Damon, Francis S. Allen, Clarence D. Warner, John E. Wilder. The music furnished by the college orchestra was highly appreciated by all present. We are glad to say that it is decided that all exercises of Commencement week shall hereafter take place on our own grounds. The custom heretofore adopted of removing said exercises to Amherst College Hall was, to say the least, of but little benefit to the participants. After the prize speaking the members of the D. G. K. Fraternity retired to the Aleph Chapter House to hold the annual convention of the Fraternity, after which all drew around the festive board to partake of the annual banquet. The occasion was enlivened by songs, toasts, jokes and pleasant stories, and it was not till the smaller hours that the merry company adjourned.

About 7 o'clock P. M., soon after the dedicatorial exercises of the '82 class fountain, some of the students were again thrown into excitement by the appearance of the Junior class, with woe-begone faces, dressed in black robes, and chanting to the doleful sound of muffled drums words that would have frightened the night-hawk from his lonely perch, and have driven the screech-owl to seek refuge under the shadow of a lunatic asylum. Never before had such a sight met our gaze, never had such sounds greeted our ears. The Juniors were bound for cremation. The German books previously used by the class were piled upon a bier which was carried by four of their number; behind these came the cremating oven, and lastly the urns which were to receive the relics of their German friend. The procession, singing the requiem, moved slowly to the campus and the cremating fires were kindled. Mr. Flint then delivered a short address in which he spoke of the good qualities of the departed and the detriment the class had received in the loss of so valuable a friend. After the oration the relics were placed in the urns and each member received his portion of the precious dust. . . .

The sun has gone down, deeper shades are falling;

Later on all is quiet in our college home. The Freshmen are dreaming of the far-away future, the Seniors are thinking of to-morrow, the Sophomores are wandering in their slumbers by lovely fountains; but the Juniors are sweetly dreaming over the relics of their German friend.

MONDAY.

The annual convention of Q. T. V. Fraternity was held on Monday evening. After adjournment of the convention the members partook of the annual banquet at the dining rooms of F. P. Wood. Members of the alumni were present, also delegates from the Orino Chapter, Me., and the hour passed swiftly by while each one of the merry company contributed his scrap of experience, pithy story or toast.

TUESDAY.

Tuesday morning found everything astir about the college. The examination of candidates took place at 9 o'clock at the Botanic Museum. At 10 o'clock the Seniors passed a public examination in agriculture for the Grinnell prizes. The Judges were Dr. Synde of Athol, Benjamin P. Ware of Marblehead and W. S. Warner of Sunderland. The topics for examination were, Soils: Composition and origin of Soils. Practical varieties of Soils; their characteristics and

adaptations. Soil tillage; the methods and effect of the same. Plants: The Structure of Plants and the sources from which the materials of their structure are obtained. Soils and Plants: The effect on the soil of *natural* plant growth, effect of artificial production. The condition of an exhausted soil. Fertilization; what agents or substances may be employed for the purpose. sources from which they may be obtained, and their influence on soils and plants. Farm Management: Farm economy. Farm accounts. Selection, division, fencing and cropping of a general farm. The influence of agriculture on national character, wealth and prosperity. Growing grain as a market product and its effect on the farm. The fruits of the farm. The demand for cattle and their products, and the source and extent of the supply. Improved breeds of cattle, their characteristics.

Tuesday afternoon the public exercises of the Q. T. V. Fraternity took place in the College Chapel. The exercises were opened with prayer by the chaplain. The oration was delivered by E. F. Danforth of Orino Chapter, Me. He dwelt more particularly upon the benefits and advantages derived from a scientific education rather than that of a classical course. The oration showed careful thought and preparation, and we trust all present were convinced of the vital importance of scientific institutions. Of the poem read by C. F. Coburn, Amherst Chapter, little need be said; the hearty applause that greeted the reader showed the great appreciation of all present. The music furnished by Southland's orchestra of Springfield was, to say the least, first-class and loudly applauded.

After the closing of the public exercises of the Q. T. V. Fraternity, many assembled on the college green to listen to the dedicatory exercise of '82 class fountain. The oration was given by F. G. May of Boston, after which the ode was read by C. D. Warner of Granby. The fountain was then given over to the care of the college. In accepting it President Stockbridge thanked the class, promising that it should be preserved and guarded in strict remembrance of the class of '82.

Tuesday evening a large company of friends met at the house of President Stockbridge; among the guests was Gov. John D. Long.

WEDNESDAY.

About fifteen of the alumni met in the museum building at nine o'clock this morning and were called to order by J. F. Barrett, vice-president from '75. It was voted that the executive committee be directed to thank Prof. Goodell for his kindness in preparing and printing obituary notices of Messrs. Curtis and Lyman of '74 and Southmayd '77, and to see that the expense of the same be borne by the alumni association. The officers were then elected for the ensuing year as follows: President, James H. Webb, '73; vice presidents, W. D. Russell, '71, E. R. Dyer, '72, H. B. Simpson, '73, J. M. Benedict, '74, J. W. Clay, '75, T. E. Smith, '76, J. Wyman, '77, C. O. Lovell, '78, W. A. Sherman, '79; treasurer, H. E. Stockbridge, '78; corresponding secretary, S. T. Maynard, '72; recording secretary, P. M. Harwood, '75; executive committee, J. W. Clark, '72, (E. E. Thompson, '71); auditing committee, J. H. Morse, '71, H. L. Phelps, '74, Atherton Clark, '77. The meeting then adjourned.

At a meeting of the trustees this morning Mr. Goodman resigned and Mr. William Wheeler of '71 was unanimously elected to fill the vacancy. At the same time $1300 was voted for repairs and the question of allowing the battalion leave to go to Boston, Sept. 17th, was left with the executive committee.

At the conclusion of the military exercises the battalion was marched to the armory where they turned in their equipments and were then dismissed. The graduating exercises took place in the chapel. The speakers were as follows: William G. Lee of Amherst, The New Era; George A. Ripley of Worcester, Steam and Chemical Forces; Charles M. McQueen of Longmeadow, Zenobia the Desert Queen; William C. Parker of Wakefield, The Phenomena of Plant Life; Alvan L. Fowler of Westfield, The Military Policy of America; Frederic E. Gladwin of Westfield, The Sugar Beet Industry; Almon H. Stone, of Phillipston, Buddha. The last speaker delivered the valedictory.

At the close of the literary exercise Gov. John D. Long addressed the graduating class, and presented the diplomas of the college in the name of the Commonwealth of Massachusetts. The exercises of the week closed with the following announcement of prizes awarded:

FARNSWORTH RHETORICAL MEDALS.

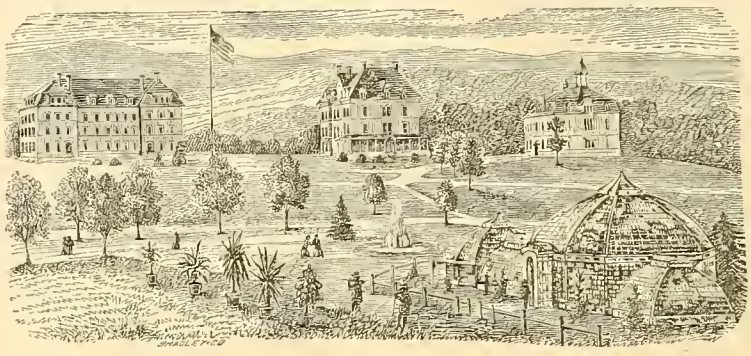
Gold medals to Chester Damon, Lancaster, from Sophomore class, and David O. Nourse, Bolton, Freshman class; Silver medals to John E. Wilder, Lancaster, from the Sophomore class, and to Homer J. Wheeler, Bolton, from the Freshman class.

GRINNELL AGRICULTURAL PRIZES.

First prize of fifty dollars to Almon H. Stone, Phillipston, and the second prize of thirty dollars to William G. Lee, Amherst.

We wish a pleasant vacation to those of our number who have decided to stay on the college farm.

Several of the students are planning a trip to the White Mountains.



Massachusetts Agricultural College,

AMHERST, MASS.

The full course of study is four years, and includes French, German, Literary, Scientific, and Mathematical Studies. Graduates receive the degree of B. S. Scientific and practical branches relating to Agriculture and allied industries can be taken as special courses. The paramount aim of all instruction is to combine culture with thorough education for the active business of life. The first term of the college year commences Aug. 25th; the second term, Dec. 9th; the third term, March 25th, and ends June 23d. Candidates for admission must be fifteen years of age, and pass examinations in Grammar, Arithmetic, Algebra through simple equations, and History of the United States. Labor on the Farm or in the Horticultural Department is required six hours a week, and Military Drill three hours. Opportunity is given to labor for self-support. The necessary expenses, from $175 to $250 a year, one-half of which the student can earn by his labor if he desires. Further information may be received by applying to

LEVI STOCKBRIDGE, President.

THE CYCLE.

VOL. III. WEDNESDAY, JUNE 22, 1881. NO. 1.

Published by the Aleph Chapter of the Φ. Θ. Χ. Fraternity, Mass. Agricultural College.

ORDER OF EXERCISES

For the Eleventh Graduation Anniversary, June 20, 21, and 22, 1881.

Monday, June 20.—Farnsworth Prize Declamations, at 8 P. M.

Tuesday, June 21.—Examination of Candidates for Admission to College, in the Botanic Museum, at 9 A. M.

Public Examinations of the Graduating Class in Agriculture for the Grinnell Prizes, in the Chapel, at 9 A. M.

Meeting of the College Trustees and Overseers, for Discussion and Interchange of Opinion, in the Chapel at 11 A. M.

Oration Before the Shakespearean Club, at 2.30 P. M.

President's Levee, at 8 P. M.

Wednesday, June 22.— Alumni Meeting in the Chapel at 8.30 A. M.

Business Meeting of College Trustees, in the Botanic Museum, at 9 A. M.

Review of the Battalion of Cadets by His Excellency, the Governor and Staff, on the Parade ground, at 10.30 A. M.

Graduation Exercises at 2.30 P. M.

In fulfilling the promise made two years ago, The Cycle makes its appearance before old friends, hoping, nevertheless, to be welcomed by many new ones. To those of us who were engaged in preparing the first number of our paper the undertaking has been fraught with only pleasant memories, and we feel sure that the associations then established between ourselves and the public to whom we appealed, will be continued between those who have since come to our assistance and the new friends gathering around us. Our position has from the first been a novel one, and our course one difficult to pursue to the end constantly in view. Published by a college fraternity, we have ever received the most cordial support from those at whose suggestion and in whose behalf The Cycle was called into existence. And the success of last year gives us every reason to believe that our efforts were appreciated by the student public and the friends of our college at large. Yet we feel constrained to reiterate that the paper, though belonging to a society numbering less than a score of undergraduate members, is devoted to the interest of no individual or caste, and will sedulously endeavor, so far as is in its power to perform all labor and devote all energy to whatever shall tend toward placing the maroon and white in the position from which we all so desire to see it wave. Few changes in the appearance of this issue need to be chronicled. The supplement was so generally appreciated and thoroughly successful that its perpetuation was assured. The custom heretofore in vogue of annually giving a conspicuous place to an article from the pen of some well-known graduate brother, has given place to the practice of devoting our columns exclusively to shorter sketches from student members, thus becoming even more eminently than before a college paper, and no one subject receives the preponderance. If there is any particular change in our general policy apparent, it is occasioned by our desire that The Cycle might bear more implicitly the impress of the institution from which it emanates, and to whose principles we are most sincerely devoted. We have endeavored to preserve those features which have heretofore aided most toward the success of our undertaking, and though our efforts fall far short of the goal before us and toward which we are determined to faithfully direct its course, we hope it may disappoint none, and bespeak for it only friendly criticism. We assure you that, with your aid, The Cycle shall not unfaithfully represent the college in which our hope is centered, nor be found wholly unworthy the cause to which it is pledged.

"No more spasmodic legislation is needed," said Governor Long, considering the relation between the State of Massachusetts and her Agricultural College. in his last annual message to the General Court. In our opinion, he stated the point exactly; and, did space allow, we would avail ourselves of the opportunity for preaching a sermon with the above quotation for a text. From the very foundation of our alma mater, she has been most seriously hampered by the dependence upon political whim and legislative temperament, and the vacillating treatment we have received from the law-makers of the commonwealth. has of necessity resulted in unstability, so that this same "spasmodic legislation" has been the great impediment to our success,—the bane of our existence. Please do not understand us as entering a universal protest against the attention we have received from our legislature; no such unqualified and unjustifiable tirade is our intention. The legislature called us into existence, and first and last has given us bountifully from the treasury of the State; but money has not always meant support. What we wish to proclaim against is the alternate heat and cold to which we have been subjected, and the perpetual arraignment of the college at the State House, sometimes in the guise of friendship, but not infrequently through open hostility to the institution created by the general government, and to the perpetual sustainment of which the Old Bay State pledged her honor. No institution, public or private, educational or otherwise, can have a healthy existence, or attain the proportions to which it might otherwise aspire so long as its foundations are constantly shaken by unstable legislation. Only a year ago the very existence of our college as an independent institution was threatened, and as a result the succeeding freshman class was far smaller than might otherwise have been expected. This year a plan was set on foot for creating a revolution in the board of Trustees of the institution, and as a consequence a hoped for private donation has been indefinitely delayed, and the act creating a throughly endowed experiment station at the college failed for this year at least. These are perhaps not the most forcible facts in support of the Governor's statement, but are those of most recent occurrence, and hence most generally recognized truths. The Massachusetts Agricultural College is not and has not been seeking legislative aid. It is self-supporting, being the only institution of the kind in America; it is faithfully and considering its resources, ably performing the task set before it. In consideration of these facts, is it asking too much that it be allowed immunity from this "spasmodic legislation" of the past? When by this means it will most surely receive favor in the eyes of the public and most faithfully and successfully accomplish that for which it was endowed by the United States and fostered by Massachusetts.

THERE is one fact of which we wish to remind you. No longer ago than '76 and '77 our college for two successive years, in its annual "Fall Athletics" achieved higher average records than any other New England institution, we know that some of the feats then performed have been surpassed by men now in college; considering these facts we can not too strenuously urge upon you the re-establishment those annual sports. They can but accrue to the welfare of those who participate in them and to the honor of the M. A. C.

THE question is not infrequently asked: "What has the Massachusetts Agricultural College done in the line of experimental researeh?" The question is a fair one and results generally from real interest, and from the fact that many of the investigations have extended over a series of years so that the results have never been *collectively* published. Many of the researches are not yet completed and are scarcely ready for publication, while others of minor importance may have been omitted from our list, but we believe the following is the ground covered by the experiments conducted at the college.

The planting and management of forests.

The growing of Sugar Beets, the manufacture of sugar therefrom, and trials of their value as stock feed.

The growing of Early Amber Cane, and the manufacture of sugar and syrup from its juice.

The source of supply and the quantity and quality of our manurial agents.

The effect of chemical salts on the carbo-hydrate contents of plants, and the quality of fruits.

Laboratory and physical examinations of the South Carolina Phosphates, and trials of their agricultural value in the raw state and after treatment with acids.

On the use and effect of common salt on the grain and root crops.

Examinations of the chemical and physical faults of the salt marshes of the State and the devising of methods by which they can be made available for agricultural purposes.

Experiments with compound commercial fertilizers to test their comparative agricultural value, and their value as compared with single elements.

To determine what elements make practically a complete manure on average soils.

To determine the proportions of different elements of nutrition to be used to save needless expense and to produce the most certain results.

Experiments on the continuous growth of crops on the same soil with chemical fertilizers alone.

Investigations respecting the quality and composition of commercial fertilizers offered for sale, and the protection of the community, by legal control and inspection, from frauds in the same.

Observations on the phenomena of plant-life.

The circulation of sap in plants, and their expansive power during growth.

The girdling of fruit trees and plants to hasten the time of ripening and improve the quality of the fruit.

The construction and repair of common roads.

The establishment of true meridian lines to regulate the practice of surveying.

The reclaiming of swamp lands.

Methods for the renovation of exhausted pastures.

Experiments with regard to the underdraining of wet soil.

The utilization of refuse materials for fertilizing purposes.

Investigations into the composition and comparative agricultural and economic value of fodder and food producing plants.

The propagation and cultivation of new varities.

Examinations into the causes and remedies for plant disease, particularly the pear blight, and the yellows of the peach.

Studying insect and parasitic pests.

Efforts toward determining the sex of offspring.

Investigations with regard to fungoid growths.

Experiments concerning the changes produced in green fodder by the process of preservation in silos.

We claim that the above is conclusive proof that the Massachusetts Agricultural College has accomplished more for the advancement of agricultural science than all other similar institutions and experiment stations in America. And yet the labor has all been given freely by the officers of the institution outside of the duties for which they receive their salaries, the funds have either been contributed from the private means of the members of the Faculty or have been obtained from sources which could ill afford the drain, and the results have been reached in the face of obstacles almost insurmountable. We are induced to ask the legislature what might not be accomplished by a properly endowed and equipped experiment station established at the college?

On the very day the last number of The Cycle was issued, a revolution occurred in the management, and a new epoch in the history of the college was entered upon. We refer to the election of a graduate of the institution to its Board of Trustees. This event was simply a matter of time, for no one can be better fitted for the duty of governing an institution than he who has been educated by it; and the management of our alma mater must gradually devolve upon her sons. But it should not be forgotten that the college is as yet but in its infancy and has no men of years among her alumni. Therefore, the change from old and tried hands to younger and less experienced ones should be gradually effected, for the single fact of graduation can never supply the experience, discretion and judgment required for the proper fulfillment of a trust so high. Only by the union of mature citizenship with alumni qualifications can the most perfect results be obtained. Considering these facts we can but believe that the recent endeavor to depose a part of the present board of trustees and hoist men unknown into the office was ill-advised at least, and we most sincerely rejoice that the attempt met with so decided a rebuff at the hands of the State senate.

The standard for admission to college appears to us to call for reconstruction of the most vigorous kind. It is faulty in its construction, is open to disastrous misinterpretation, and jeopardizes the most perfect success of the institution. The point constantly urged in its favor is, that, being a State college preparatory examinations should embrace only such ground as is covered by the general school system of the State. This tenet is undeniably true, yet it does not with equal certainty apply to the case in hand. The requirements for admission call for proficiency in algebra through simple equations; but a knowledge of geometry is not embraced in the specifications. Now it is an incontrovertible fact that any school in the commonwealth that carries its pupils to quadraties can prepare them for an exam-

ination in the entire study. Why then does our examination stop with simple equations? Again, nearly every school within the limits of the State, which gives instruction in algebra also offers a knowledge of geometry to those desirous of obtaining the same. Why then is this science totally excluded from our admission examinations? The point here naturally presents itself: Why should the standard be raised at all? For the, to us, all sufficient reason that as now in vogue it is injuriously deceptive, conveying to the casual observer the impression that, if the curriculum corresponds with the preparatory requirements it falls short of reasonable expectations. And more forcibly yet, because of the lamentable disparity between the requirements for admission and the after requirements of the course. in many instances allowing young men to enter the college before they are qualified to reap the greatest benefit from the advantages offered. The admission examinations are much more severe than is apparent upon their face, and accepted candidates for admission to more than one great New England university have utterly failed in their endeavors with our examination papers. Yet the fact remains, and is daily demonstrated that many students enter the institution indifferently prepared to pursue with either credit to themselves or the college, the studies laid down for them. Elevation of the standard for admission would do away with this injustice and remove a great source of double injury. We are proud of our alma mater, devoted to its principles, admire its curriculum and the superior advantages it offers for obtaining that useful knowledge, that practical scholarship, demanded by the progress of the age; and we glory in the achievements of this youngest among the sisterhood of colleges. For these very reasons we intensely desire advanced requirements for admission. The greater the preparation for any work, the more perfectly will it be performed. The more marked the qualification the more certain and more grand the achievement.

A LAY SERMON.

"There shall no straw be given you, yet shall ye deliver the tale of bricks."

The above bit of Mosaic history not infrequently forms the burden of our thought as we contemplate the demands made upon our college by persons who consider themselves qualified to criticise the efforts of this explorer in untried fields, and justified in receiving that for which neither seed nor straw has been furnished. We can here, however, refer to but one instance of this kind; but one where, literally stubble has been given us to glean.

We refer to the demand that the farm connected with our college shall be made to return that which can never be rightfully expected of it, namely, a surplus to the treasury of the institution. This exactment has never, with one exception, been complied with. and we affirm that this condition of affairs should and must exist, that the institution may most perfectly accomplish that for which it was established, maintain the principles for which it was founded. and aid those for whom it labors.

First, however, from whom do the adverse criticisms come? First, from farmers ignorant of the true basis on which their calling rests; and second, from persons as ignorant of successful farming as they are of the chemical composition of the aurora borealis. And both classes are as ignorant of the true conception of the object, aim, endeavors and accomplishments of the Mass. Agricultural College as they are of comprehending the principle of life itself.

Now what causes have contributed toward rendering our farm an unprofitable investment from a pecuniary point of view?

The Aggie domain consists of 384 acres. It was purchased seventeen years ago, and originally consisted of five distinct farms, each surrounded and divided by its fences, supplied with its own roads lanes and buildings, all of which were nearly worthless and required removal before the land could be brought into shape for being conducted under one management. The entire estate was intersected in every direction by miles of Virginia rail fence harboring unsightly and unprofitable hedges of several years growth. Clumps of worthless alders and birches covered many a field, while here and there appeared orchards of scraggy, unproductive seedling appletrees. Much of the land had been so depleted by constant and improvident cultivation as to have become comparatively sterile, though our inheritance of desolation brought forth bountiful crops of white daises, yellow dock and wild turnip.

Fourteen years ago last April the present authorities came into active possession of this cheerless domain. Ask the surrounding landowners if we have overdrawn the picture. Yet who of you would recognize in it the college home of to-day? A well-tilled, comparatively productive and wonderfully beautiful estate, without hedge, fence ditch, or gully; laid out in smooth fields, intersected by well-kept and shaded drives, paths and pleasure grounds; ornamented with trees, flowers and fountains; supplied with new and appropriate buildings.

This transformation has been wrought at the expense of the land. Is it a wonder that during the progress of this necessary improvement the farm has failed to return a balance to the treasury?

But now that the improvements have been accomplished, why is the investment a pecuniary failure?

The three farming industries of greatest importance in Massachusetts, and those which yield far greater returns than any and all others, are market gardening and fruit culture, dairying and tobacco growing. Our location for the former enterprise is not of the best, but it is, nevertheless, a growing industry for the college and one already very profitable; but everything of a gardening nature, including the cultivation of flowers, fruits, trees, shrubs and bedding plants belongs to the domain of Flora, and comes properly under the control of the horticultural department of the college, a division as distinct from the farm as is the department of the adjutant-general of the commonwealth from the office of the secretary of state. The farm can therefore receive no credit for profits derived from this division of agriculture.

So far as the dairy interest at the college is concerned, it is sufficient to remark that it cannot be made profitable, for the simple reason that the large herd of cows are required to supply the students with milk and butter at prices so unremunerative that board can be furnished at $2.50 per week.

The growing of tobacco, the other profitable branch of our farming, is justly prohibited in a State educational institution. Another fact overlooked is this: That the farm pays the salary of its manager, —that is, supports his family and furnishes his profits, if such there are. Are there not other farms in the State which fail to do more?

Again, the farm is called upon to perform much labor from which it can reap no benefit. It must keep the parade and pleasure grounds and the miles of drives and walks in repair, though no credit is given it for the labor performed. The teams are annually called upon to transport hundreds of tons of coal for use in the green-houses and dormitories, and there are many other similar constant calls upon the resources of the farm for which it receives no pecuniary reward. While student labor, though necessitated by the character of the institution and essential to the support of its members, however skilfully and intelligently conducted, can never be made profitable when performed at odd hours and remunerated at the price of the best constant labor.

Now why should the institution not be pecuniarily successful in the future? For all of the above reasons, several others of a similar nature, and these all-important ones in addition:

The farm should be an experiment station for the advancement of agriculture, and the investigation of all subjects but little understood; for shedding light upon the darker paths of farm practice, and lightening the burdens of producers and consumers. Many such investigations have already been conducted at the college to the direct loss of the farm balance sheet. Original research can never be made profitable to the experimenter. There is not a pecuniarily successful experiment station in Germany. When Rothamstead returns an income to its proprietors, then may the citizens of Massachusetts rightfully expect dividends from their college.

The farm is part of the regular illustrative apparatus of the institution. Was Harvard college established as a money-making enterprise? Are the workshops at the Mass. Institute of Technology a paying investment? Does the physical apparatus at Amherst return an income to the treasury? Of course not, yet these things might be as reasonably demanded as that our farm be self-supporting. Why, pray, should the land of the agricultural department be required to perform that which is not expected from the herbarium of the botanical department?

When the Mass. Museum of Comparative Zoölogy at Cambridge returns dividends to the State, then shall her Agricultural College at Amherst yield funds for the support of older institutions from which less is required.

One other point should be most distinctly understood. We wish to state emphatically that though the college farm, as a whole, is not an example of profitable cultivation, the students have abundant opportunity for witnessing successful agriculture and seeing the theories of the class-room successfully applied to operations in the field.

Many of the crops, fields and undertakings of the college are abundantly remunerative, but the estate in its entirety can never be made to return a surplus to the treasury while it is of necessity compelled to devote so much of its energy to fields from which it can never receive a return. Nor so long as it labors for the advancement of agriculture, that other lands may be tilled with greater success; that the cultivators of our soils may more thoroughly understand the underlying principles of their profession and their correct adaptation to the demands of modern agriculture.

HOW WE CROSSED THE RUBICON.

My Dear Cycle:—

Your cool and calm demand for a letter has just arrived and filled me with despair. "Something with a California coloring" desired. What else could be expected from a wanderer in the classic land of Angel's Camp and Yuba Dam? Will you have a dissertation on "Irrigation as Practised on the Pacific Coast," or some yarns of "early days?" A few points on the everlasting Chinese question would undoubtedly be of intense interest, and possibly you would like to know how to "salt a prospect." But personal experience is said to be most effective. So, having heard something about the crossing of the Rubicon by a well known politician some years ago, your correspondent will relate the adventures attending the performance of the same feat by himself and "pard," last summer.

On the sixteenth of August we set out on foot from Georgetown, El Dorado County, bound for Lake Tahoe and way stations. One being armed with a carbine and pedometer and the other with a bowie knife and sketch book, we felt equal to any emergency. Sixty miles east of us lay the beautiful lake in the heart of the Sierra. Few and far between were the stopping places on the way, yet we preferred to take the chances of obtaining food and lodging to the labor of packing blankets and grub. Bright and early on that beautiful morning we left Johnny Bundshuh's comfortable hotel and were soon climbing Hotchkiss hill. To the north, across the tremendous canyon of the Middle Fork of the American River, the high bank of the Dardanelles Gravel mine could be distinctly seen, while far away to the south-west, in the great valley of the Sacramento, the outlines of Monte Diablo were dimly visible.

The trail was, of course, covered to a depth of six or eight inches with genuine California dust, which can be appreciated only by those who have learned its character by sad experience. So fine as to be almost impalpable, and dry with "consummate" dryness, it floats about the unfortunate traveler in a perfect cloud. Our destination for the first day was a little camp called Onion Valley, twenty-four miles from Georgetown. During the afternoon we suffered badly from thirst as no water could be had on the summit of the ridge along which the trail ran. At six o'clock we reached the settlement and after some difficulty obtained lodging with a Swiss rancher who spread us a regal repast of bear-stew, venison and fresh milk. "Tell it not in Gath, publish it not in the streets of Ashkelon," but the rancher's dish-pan did valiant service that night as a bath tub! Before we had been an hour on the road the next morning we lost our way. Seating ourselves on a log we organized a caucus and after deciding what course to take started out over the brush. "Over," because only a bear or a rattlesnake can get *through* the thickets of manzanita and chaparral. After a short scramble we reached the road and just as we did so a fine black-tailed deer bounded across it, going through and over the brush in tremenduous leaps that soon carried it out of sight.

We were now in the "Desert," noted as a resort for deer, bears and rattlesnakes, and occasional bear tracks and snake trails caused us to keep a sharp look out. We had intended to reach the "South Fork House" at noon, but losing the road had delayed us so that it was nearly three before we caught sight of the lonely cabin bearing the above name. To our dismay it was locked. We had been without food since six o'clock and had walked twelve weary miles. Diligent search disclosed several turnips and on these we made a meal. Knowing of no other stopping place we determined to spend the night in that cabin.

Just as your correspondent had removed one of the windows and was preparing for further exploration a lone traveler appeared en route from Tahoe to Georgetown and he intended to spend the night at the South Fork. Learning from him that there was a comfortable stopping place eight miles ahead of us we left him at the cabin and started for Wentworth's.

After traveling about six miles the trail became rough and indistinct and darkness began to set in. One of us, who shall be nameless, had a sore foot and a lame knee that added not a little to his discomfort. Darker and darker it grew; the trail seemed to "run into a squirrel track and up a tree." Conversation flagged and we plodded on, regardless of stumps, swamps, or wild-cats. Suddenly the leader paused and remarked impressively: "Sh! did you speak?" "Yes." "What did you say?" "I said: '*Blast* that *blasted* root!'" "Oh!" So we went on, and on, and on until, a little after eight, the lights of Wentworth's filled our hearts with joy. A good supper and a comfortable bed were appreciated that night.

The next morning we started on a blind trail, hoping to reach the lake before dark. For a couple of miles our way lay through a narrow meadow shut in by mountains, but all at once we came out upon a broad sheet of granite that stretched up to the summit of the ridge and far away on each side. The trail here was indicated by occasional heaps of stones. After an hour's climbing we reached the brink of a beautiful little body of water called Pleasant Lake and in a short time we stood on the summit of Tell's range, the most western of the three ranges into which the Sierra Nevada is here divided. The view was one of the grandest imaginable. Sloping down on all sides were great bare stretches of granite cut by canyons where brooks fed by mountain snows had worn their way into the solid rock. To our right the range rose some five thousand feet above us and was crowned by great masses of snow, while far below in the center of this great granite basin a narrow strip of meadow and timber land marked the course of the Rubicon. Across the river, directly opposite, we could see the trail winding back and forth on the face of the precipice forming the western side of the "Western Summit," which here rises twelve hundred feet above the valley. After some clambering among the rocks we reached the level of the river. It is said that "Cæsar paused upon the brink of the Rubicon." So did we. In fact we lost the trail and the more we searched for it the more we lost it. We had heard of some Springs a short distance up stream so we concluded to follow the river until we found them. Just as we were about to give up in despair we came out in a little clearing where there were a couple of log cabins. This was the summer resort known as Hunsucker's Soda Springs. It is a beautiful place and the water is very palatable. We were still ten miles from Tahoe, so we didn't tarry long at the Springs, but after being shown the trail commenced our climb up the cliff. On reaching the summit we had a repetition of the morning view. We were seven thousand, two hundred feet above the sea, but some of the peaks around us were over twelve thousand feet high. For the next few miles our trail was almost level and wound through beautiful meadows and by small lakes. The display of wild flowers here exceeded anything it had been our good fortune to see. They were of all hues and in the clear mountain air every color seem brighter and more beautiful than in the flowers of the plains. Honeysuckles and lupines, painted cup and larkspur, lilies and water-lilies vied with each other in brilliancy. We were lucky enough to find one or two clumps of the singular snow flower that pushes its crimson stalks through the snow and seems to flourish in its "cold embrace."

A sharp turn in the trail brings to view the matchless lake, well named the "Gem of the Sierras." Stretching away for miles, hemmed in by lofty mountains, the bright blue of the sky reflected in its quiet waters, formed a picture that will not soon be forgotten. We reached its shores at Sugar Pine Point where the genial McKinney has fourteen large cottages for summer visitors. Never shall we forget the peaceful smile he wore when he showed us our apartments and remarked that we could fill our water pitcher either from a ditch behind the cottage or from the lake in front, and in response to calls for soap, said he thought we could get some in the kitchen.

But time and space would fail us to tell of the boat rides on the unfathomable lake, of the return trip by way of Loon Lake instead of Wentworth's, of the tramp in the darkness across the "desert," or of the interview with a bear when we stood not upon

the order of our going but went at once. It is enough that we reached Georgetown in safety Saturday night, August 21, having walked one hundred and twenty miles over mountain trails in six days, and established our reputation as tramps.

IN MEMORIAM.

Come with us ye merry maidens,
Come, O, come away,
Let us have a jolly "racket"
Riding in the sleigh.
Don't say no; it is pleasant.
Don't be scared, I pray.
It is jolly sport in winter
Riding in the sleigh.

Cho.—Look out there hold your horses,
Or they'll get away.
Bless me! how the girls are laughing;
Riding in the sleigh.

Hip, hurrah! the girls are ready.
Do not make delay.
O, I like to go with maidens
Riding in the sleigh.
Blow the horn, sound the bugle,
Let us all be gay:
For we only go in winter
Riding in the sleigh.—Cho.

When I'm old and very feeble,
And my locks are grey,
I shall think how I went riding
In a two-horse sleigh,
With two fairy maids beside me,
Full of fun and gay—
O, my heart feels yet the the impulse(?)
Riding in the sleigh.—Cho.

CHEMISTRY IN AGRICULTURE.

Oration Delivered at the Boston University Commencement, June 1st, 1881, by Joseph L. Hills.

"The history of mankind" says Albrecht Thaer, "is also the history of agriculture." Notwithstanding the testimony of the father of modern agriculture, we see the fallacy of the statement, when we recollect that two thousand years ago, Cato and Collumella, Varro, Virgil and Pliny inculcated the art of agriculture in a manner essentially the same as to-day. But husbandry is both an art and a science; the true modern agriculture is the latter and that has no history; for it was not until the first of our own century, when chemistry, a science yet young, was brought to bear upon this art which has so long slumbered, that it leaped into a new life and took its stand among the sister sciences.

The first faint glimmer of the approaching dawn of a rational agriculture was seen early in the seventeenth century, when Lord Bacon consigned his large agricultural library to the flames, saying, "In these books I find no principles; they can therefore be of no use to any man." He who exposed the sophistry of Aristotle was also the first to recognize that something more than mere empiricism was essential for agricultural advance.

The second milestone on the newly opened road was passed on the abandonment of the old "phlogistic" theory, and the substitution by Lavoisier of the system now in use; and with this system, aided by the balance, the chemist's compass, agricultural chemistry has taken a decided stand. The first great worker in the new field was Sir Humphrey Davy. He unlocked the door, and DeSaussure, Sennabier and Sprengel, crossing the threshold, pushed their adventurous way yet further, but it was not until the splendid genius of Liebig, outstripping every competitor, rooting out the false deadwood of speculation, gave us the living tree in all its beauty, that a true insight was gained into the workings of the new science. Then it was that agriculture rose from effect to cause, burst from the chrysalis of theory and emerged clothed in fact.

The establishment of agricultural colleges in Europe and America has materially aided progress in this direction, by creating a class in close sympathy with the science and by furnishing material for advanced work. It is an encouraging fact that science as a study is gaining favor. Let the coming student turn from Homer, Plato and Cicero, to Newton, Faraday and Liebig and the world will be better for it.

The application of chemistry to agriculture is so extended that it were useless to do more than cite a few examples.

At the very foundation of all agricultural operations lies the corner-stone, the maintenance of soil fertility. From earliest times agriculture has been but a system of spoliation; the largest crops at least expenditure for restitution; and such restitution was made ignorantly without regard to the physical or chemical action. In the early days of agricultural chemistry such hobbies as the humus and the nitrogen theory were strongly advocated by those who thought they had found the true agricultural philosopher's stone. It remained, however, for Liebig to show the true relation existing between the soil and the plant, in his celebrated mineral theory. This placed the diminution and increase of field crops in exact proportion to the diminution or increase of the available mineral substances of plant food conveyed in fertilizers, and showed that no one element can take the place of another or perform its functions.

Empiricism asked,—how can soil fertility be maintained, and science, with Liebig as its mouth-piece, answered,—only by restoration of all the elements of fertility.

Varro tells us that "the land must rest every second year, or be sown with lighter kinds of seeds which prove less exhausting to the soil." Such a crop rotation,—aside from its imperfection—necessitated a large estate, and only in modern times since chemistry has determined the ash constituents of plants and shown their requirements, has an intelligent crop rotation been practiced.

Again, from Collumella we learn that the best fodder plants are lucerne and vetches, but he says nothing of their nature or their nutritive value. Now there is no plant of itself a complete fodder, having the requisite proportions of all the substances which are necessary for a perfect animal development. In pointing out the relations between the composition and nutritive value of the food and the individual requirements of the animal. Gronven has given us the true key to fodder rations.

It is thus throughout agriculture. Wherever the blind art knocks and asks for light, unerring science opens the way to a rational agriculture; wherever the art shows the result, the science points out the cause. The more brilliant the light, the more rapid the progress. When, forty years ago, Wöehler artificially produced an organic compound, heretofore known only as a product of animal life, another field was opened to agricultural chemistry. Here too we may expect time to produce a revolution, enabling us to form organic bodies under more favorable conditions. May not the chemistry of agriculture point out the way to the utilization of the ocean of nitrogen now locked up in the air? May not the science investigate and explain all that the art asks and deduce principles applicable to all circumstances? Its past has been brilliant, its future lights up with a yet brighter lustre. As years roll on, agricultural chemistry, patient and persevering, will push forward, formulated a perfect agriculture, and raise agriculture to the dignity of a science.

THE FALL OF BABYLON.

At the base of the obelisk, recently removed from Egypt to New York, was found the following history. It is of undoubted antiquity and may be of interest as showing how history repeats itself:

And it came to pass in the country of Unkel Samuel, about the time of the Great Ulysses, that the wise men and rulers of the land gathered together to make laws for the good of the people. And they talked and chinned among themselves after this manner:

Lo, in the countries of the east, across the great waters, the people have established schools for the improvement of the tillers of the ground.

Yea, verily, in those countries the boys of this generation are wiser than the learned men of the country of Unkel Samuel. And one patriarch more experienced than the rest said, Cannot we go and do likewise? And the others with one accord answered, Well, we should relax our features, which being interpreted is, we should smile.

And it was agreed that they should give unto every state in that country a certain amount of land for the maintenance of such schools. And the rulers of the state of Mace Chewsett, which is by the sea, did seize of this land and said unto the people of that region, Behold, in that village which will give the most talents of gold and silver will this new school be placed. And forthwith the town of Ham Hurst, which is in the valley of the Konect Icut, did pan out right manfully and offer more shekels than any place in that region. And the wise men said, It is well, there shall it be. And it was so.

Then the young men from roundabout that region and from distant countries, from the land of Jap An and Barzeal, and likewise from Konect Icut, did assemble at this school to learn to sow and reap and do all manner of hard work. And they were also taught to speak in strange tongues, to measure land and to study the past.

But after a while they became weary and considered among themselves and said, each one to his fellow and every one for himself; lo, too much study is a weariness to the flesh and an abomination unto the Lord. Let us leave off for a time and refresh ourselves by playing at the game of ball, by manipulating the sculls and the like. And, lo, with the oars they waxed exceeding skillful and attained great success in their encounters with the other schools of the land. And it came to pass when they worked but a short time at this thing that six of the best oarsmen of the school did match themselves against equal companies of young men from diverse places. They met at a place near the Field of Springs to decide which was the most skillful.

And there was a goodly multitude assembled at that place to witness the great contest. And the friends of the young farmers were in great fear and trembling so that their knees smote one against the other and they did brace each other with hopeful assurances. But, behold, when the race was run the farmers were there at the drop of the hat, which being interpreted, is they were game from the word go; and when they crossed the line the next boat was a full day's journey in the rear. Verily it was a cold day for the rest and they in truth got most decidedly left.

Now in those days all classes of people in the country of Unkel Samuel spent much time in pounding the solid spheres with the bat and kicking the hollow spheres of leather with the foot. Much rivalry was excited in these two games in which the young tillers of the soil did strive and win success.

Every third year the rulers of the land appointed a man skilled in all the arts of war to instruct these young men in the different modes of fighting. And it was considered best that this man should lead them off into the wilderness where they might pitch their tents and endure all the hardships of war, thus becoming worthy soldiers for the armies of Unkel Samuel. And they marched off and camped over against the Mount of Tobias. They took with them every man a blanket and gun and many bottles containing an excellent preventive for the disease and sickness pertaining to dwellers in tents. And they partook most copiously of this refreshing beverage, and forthwith waxed exceeding healthy and vigorous. The little army sojourned many days by this mountain and returned in triumph to the gates of Ham Hurst. And it came to pass that their captain led them forth again. This time it was to join the procession to celebrate the founding of the city of Bos-Ting. And then they showed themselves superior to all the tribes of the country. yea, verily, they took the immortal cake, which being interpreted, is, they yanked the bun. And their captain was much pleased; and he spake unto them, saying, Ye have this day won a glorious victory, ye have marched very well, not too well, but——and then he slept with his fathers and they digged a grave and buried him by the sea.

But why should all these things be told? Are they not written in the book of the school, which is called the Index? Even so, and all their doings, even from the foundation. Now it came to pass after this famous school had been established for half a score of years that the wise men and rulers of the state repented themselves that they had ever had a hand in it. And they took counsel with each other and laid plans to destroy it, saying, Why should we waste our substance on such an object, which neither pays tribute to the strong box of the state, nor sends out men to till the soil of the land of Unkel Samuel. Lo, we will sweep it off from the face of the earth and there shall be weeping and gnashing of teeth. The fools, they saw only the mote in their brother's eye while there was a whole forest in their own optics.

But now arose the true friends of the school, the horny-fisted tillers of the soil, who gathered together as one man and said unto the rulers, Depart unto Hades for we never knew you. Must we bite the dust and humble ourselves before you who are now in council assembled? Ye have told the people that none of these young men become farmers, while all the chronicles of the school show that more than a third part of the whole are engaged in that occupation. And ye did furthermore attempt to join it to

an institution which doth profess to make ministers of the Lord, but which is scorned and despised of all men. And now ye are trying to cast it wholly loose from the state and withdraw your support from it forever. Is there no law in the land of Unkel Samuel? Shall we permit our hopes to be sat on and college this day trampled to the ground? Verily, not this day, but sometime in the future when the whole state of Mace Chewsett becomes a howling wilderness and all civilization is blotted off from the face of the earth. Then will the voice of the evil one be heard in the land, and when he issues his decrees an accompanying Me too will be sounded by his faithful followers, the legislators of Mace Chewsett.

Notwithstanding these threats the rulers desisted not from their evil ways but girded up their loins and shouted defiance against all their opponents.

But, nevertheless, the school grew and prospered, and won favor in the eyes of the people. And in the village of Ham Hurst it stands even unto this day. But it has yet an insufficiency of three things, teachers, students and money, these three, but the greatest of these is money.

THE WEARY FLOWER.

The golden rays of the setting sun
Had sunk to rest in the western sky,
And the shades of night were lowering fast
O'er the mountains green and the mountains high.

The lowing herds were hastening home,
At the farmer's call and the milkmaid's song;
While the birds sang none but their sweetest lays,
That welcome scenes which to night belong.

As dewy earth outspread her arms,
All nature seem'd on her bosom to sleep;
Save a lily fair, that views the stars,
As they twinkle bright while their vigils keep.

But, as night rode on in her silent car,
O'er the flower's form sweet slumber crept;
And nestling deep in her snowy folds,
She bow'd her head—the lily slept.

—The difference between an umbrella and a woman is that you can shut up an umbrella.

THE OLEOMARGARINE QUESTION.

We fear farmers as a general thing do not look at the oleomargarine question in the light of reason nor in such a manner as to secure their own best interests. We have no space to enter into the subject at length, but to a few facts we wish to allude.

Oleomargarine, which by the way is a misnomer, is not "adulterated butter," but is a cheap and wholesome artificial substitute for the natural product. It is no more genuine butter than peanut oil is olive oil, yet, like the former, contains nothing deleterious, opens a new source of food supply and a new demand for agricultural products; and as such should be welcomed, not only by the mass of consumers, but by the farmer who too frequently looks upon it as an interloper. Many would-be instructors are raising a great hue and cry on the plea that the article is both unhealthful and filthy, and that it meets with the approbation of scientists simply because the samples they examine are made for that particular purpose and are obtained from the manufacturer himself. Particularly was this charge recently made by a well meaning agricultural journal against Prof. Chandler for his commendatory statements concerning the product under consideration. Now the facts in the case are, that Dr. Chandler is president of the New York Board of Health, a part of his duty is to inspect the food supply of the city; his examination of oleomargarine was official, was in the line of duty and was the work of an expert. The samples tested were purchased in open market, *were obtained from consumers instead of producers*, the result of the investigation was highly favorable to "artificial butter." High authority as this is, there is one more incontestible yet, namely, *the verdict of the people*. And they find it impossible to distinguish between the real and the artificial; they pronounce the latter superior to a large proportion of the former, and persist in using it knowingly, in spite of all anathemas cast upon the new article.

That there have been dishonest practices connected with the subject cannot be denied, but there has been spurious oleomargarine placed upon the market as well as spurious butter; but the demands of the people and precautionary legislation are rap-

idly remedying the evil. Thus, rather than decrying the innovation we must recollect that oleomargarine, like everything which cheapens food expense, is a blessing to the masses. That it creates a valuable export out of before worthless material, for this purpose being far better than real butter. That the demand for *good butter* is constantly on the increase. That it creates a new demand for two important agricultural products. That the manufacturers are not mountebanks, but like farmers are creating value where no value before existed; are, metaphorically speaking, causing two blades of grass to grow where but one grew before.

THE BOOK OF LAMENTATIONS

ACCORDING TO THE NEW VERSION.

All things, they say, must have an end;
No earthly joy can be immortal,
Our flowers will fade, our friends offend,
Our clothes wear out, and even thought'll
Pass away.

And so it seems. For, lo! Behold!
Look! See! And wonder at the picture!
I've got to move and leave the fold
Where once I thought I was a fixture.
Sorry day!

I fain would stay,—but no, I must
Submit to the inevitable.
I'll sally forth to win or bust,—
And that will be quite creditable,
If I am shrewd.

The weeks, the months, the terms, the years
That I have spent in this dear college,
Have been the best I've known,
I'm glad to publicly acknowledge, and here's
My gratitude.

How many rackets have I had!
How many joyful celebrations!
How many times I've made Prof. mad
By sleeping sound in recitations
After a rout.

How oft I've loafed on pleasant days
Beneath the lindens shady shelter,
Or played lawn tennis in the blaze
Of summer's sun until I felt a-
Bout played out.

How many pleasant friends I've found
In college and the village also;
What fun I've had in going round
To shindys, shows, and games of ball so
Frequently.

What lots of—no I will not name
The whole of pleasure's category,
But say "and so forth," for the same
Would simply be the old, old story—
Let it be.

But now, alas! the end of all
My fun has come. I must skedaddle
I must attend to duty's call;
I've got my own canoe to paddle.
I must strike.

And so farewell to all my joys;
Farewell to old associations;
Farewell to all the girls and boys;
Farewell to living on relations,
Pauper like.

Farewell, farewell, farewell, farewell.
O, Moses! aint this parting tough?
Yet, once again I'll say farewell,
But not too well, just —— ——.

THE PHILOSOPHY OF HISTORY.

"Peace is the dream of the wise, but war is the history of man."

I don't know who was the author of the above remark, but he would have made an excellent prize for a spelling-match. In one short sentence he defines Peace, War and History, and that is better than Webster or Worcester ever thought of doing. For brevity is the soul of wit, and wit is the sole requisite of a first class dictionary. Therefore it follows as a matter of course, that all I shall have to say hereafter will be gospel truth.

Peace is the lack of war; war is the lack of peace; war is the history of man, and history is the war of man or the lack of peace of man, which is the same thing. This is evident from what has been said, but just how large a piece of man is lacking in history has yet to be determined.

Adam, before the fall, it is reasonable to suppose, was more of a man than any of his descendants have been—except one. It is also rational to presume that when he fell he dropped something, although no mention is made of the fact in the account we have.

Now note the significance of these two plausible hypotheses. He was more of a man before he fell than after he took his tumble, and when he fell he

lost something. Naturally we conclude that he lost a part of himself,—that is, a piece of man. Immediately after the fall, he became capable of all manner of iniquity. He could now steal apples without being put up to it by his better half, and could tell huge whoppers with facility and a straight face. In fact he lost the power of telling the truth on all occasions; and in this loss the sons of men have all been sharers—with one notable exception—and some seem to have been born lacking the ability to speak truthfully at all.

Again, eminent physiologists tell us,—or would tell us if they knew it—that Adam had at the start an organ which has been found to exist in no one else, except the exception we have already excepted. Now this organ was played by wind and its tones were the harmonies of truth. Its absence in all mankind—except GEORGE WASHINGTON, has been the cause of much discord in the course of human events.

If my reasoning is not too intricate, it will be plain—and of course it is—that this organ was the piece of man that Adam lost when he fell. It is also plain, that the lack of this peace was war, and war is the history of man. And here we are just where we started from, only that we have travelled to the Garden of Eden and discovered the origin of History. We have found that without huge whoppers, war would never have been; and since war is the history of man, man would never have had a history if he hadn't lied. The conclusion, though saddening, is inevitable, that History is a whopper, a whole whopper and nothing but a whopper.

Stick a pin in this, to keep it from running off while we try to catch another.

History is the "Relation of Events." An event is something that happens. We never know what is going to happen, and therefore we can place no dependence upon events. It is true that coming events cast their shadows before, but shadows are delusive, and that which looks like the head of a sheep on the wall may be made by the hands of a dear. So, we still have it that events are unreliable. And History, even if it were good of itself, must be looked upon with suspicion because it belongs to a bad family,—it is a relation of events which we have shown to be so deceptive. History then is not well connected, and this in all civilized countries is an unpardonable sin.

Now get another pin and fasten this down also, while we consider another point.

Nine times out of ten,—nay, more—in nine hundred and ninety-nine cases out of a thousand, history is profane. All that is taught in our public schools, all that is studied in the colleges of this great, free, enlightened, etc., etc., land of ours,—all is profane. And profanity is an awful vice! The annual destruction of youthful morals by this one cause alone, is past all computation. Even the lightning calculators strike when charged with such a reckoning.

That this is not all poppycock can be easily proved by citing a few of the horrible oaths that have their origin in the pages of history.

But don't be frightened. I shall not cite; but let each one look over his collection and see if he does not find a good many such as Cæsar, Godfrey, and Great Scot. History opens with A-dam and how frequently does the small boy, after vain attempts at learning his lesson, close it with another!

Oh! it is pitiful, but never-the-less true, and we will pin it fast along side the others, and go on.

We frequently hear it asserted that History repeats itself, and that it does is clearly shown by the account of the Fall of Babylon, given upon another page. To the unthinking, this may seem of no importance; but it is a dangerous fact well worthy of our attention. Nothing good ever repeats itself. If I find a dollar rolling up hill, I might search till the crack of doom and never have the delightful experience repeated. It was no doubt a great blessing to the world that I was ever born, but that blessing will never come a second time. Shakespeare never repeats, and William is good. It is only the bad that tires us with monotonous repetitions and does not improve. It never rains, but it pours; every year we have the worst winter on record; it we ever say a bad word we are sure to say it again.

Repeaters are always bad and the bad is always repeated, while the good is never or hardly—that is, not very often. History repeats itself and is therefore bad. And, morever, because it is repeated, it does not change; and what does not change cannot advance; and what does not advance hinders the progress of everything else; and what hinders the progress of every thing else is a Jonah that ought to be thrown overboard. Better give History to a whale for dinner than have it standing in our way

when we want to get ahead. History is not only bad, but conservative.

There is another item to be impaled; bring on another pin. I said a while ago that History was a relation of events. It is more: it is also an inquiry into the causes and effects of the events it relates. It is, in short, nothing more nor less than an investigation committee, and therefore should be shunned by all. A good man, beset by such committee, is insulted; a bad man under similar circumstances is annoyed to say the least. Both would rather have the investigators somewhere else. The good man would wish them in heaven, the bad man in,—but we wander far from the subject. History is an investigation committee, therefore avoid History. Another pin here please.

But hold on! It is unchristian to give a dog a bad name and then hang him, and if we were to condemn History without hearing both sides, we would lay ourselves open to the charge of injustice. So we will give the accused a chance to clear itself.

Listen! Do you hear anything? I don't. It doesn't speak. It is silent. It has nothing to say. Can it be that all my accusations are thus verified? It seems to be that it can be, whether it can or not.

And now let us see what we've got on our pins:—

First:—History is founded on a whopper, is a whopper, and deals in whoppers. It tells things as they ought to be, not as they are.

Second:—History is not well connected; it is a poor relation of events.

Third:—History is profane and corrupts the morals of the young.

Fourth:—History is a repeater, does not improve and is a drag upon advancing civilization.

Fifth:—History is an investigation committee and too much given to prying into other people's business.

Sixth:—History has nothing to say in self defense.

Seventh:—We wouldn't believe it if it had.

Now! Isn't that enough bad to say of anything or anybody? Doesn't the wretch of whom it is said deserve banishment from good society? Wouldn't it be better to live in utter ignorance of the decline and fall of the Roman Empire than to keep such bad company?

I shall never have anything more to do with History and it is more than probable that History will never have anything to do with me.

History is a bad egg. Phew!

ENGLISH POWER IN THE FAR EAST.

It is hardly necessary for me to say that Great Britain in this nineteenth century occupies the foremost rank in the family of nations, politically as well as commercially. Her navy is matchless; her monstrous war vessels penetrate every corner of the navigable waters of the globe; her merchant ships swarm in every harbor; her dominions are dotted all over the earth, constitutionally an empire, whose drum beat encircles the world and on which the sun never sets.

The musical sounds of "God save the Queen" fill the air from the rugged mountains of Afghanistan to the untrodden wilderness of Zululand. Her voice is always loudest in the Eastern question, and there has hardly arisen a question in European politics for centuries in which she has not demanded her right to be heard.

But however mighty and powerful Great Britain may appear, a closer examination will show that her foreign policy is nothing but vain glory. Her influence has hardly ever been exerted for any useful end, while an island close at home bears eloquent witness to her most shameful misgovernment.

It is the aim of every nation to gain both power and wealth. But does it have any more right to gain power and enrich itself at the expense of other and weaker nations, by smuggling in contraband merchandise, than a highway robber has?

A few incidents which have occurred in the far East since the English have found two such simple-minded and convenient customers will show how England has gained her ascendency.

Who does not know the origin of that infamous opium war? Did not the English smuggle opium into China by bribing the Chinese authorities in the most knavish manner? Did not the Christian country finally force heathen China openly to accept her kind offer of the intoxicating drug at the very point of the bayonet?

An enormous amount of opium has been imported into China since that event, and to-day she imports an amount nearly equal in value to the tea which she exports.

Is it possible that a Christian nation called the most enlightened in the world has made this heathen

country turn both her cheeks to be smitten? The English missionaries, in very truth, find it a hard task to preach the gospel to these half-drunken disciples. For to-day all China seems to be in a slumbering condition from the effects of the poisonous drug. She does not even have spirit enough to face the threatening policy of half-rotten Russia.

Again, the English have achieved many wonderful deeds in Japan since the opening of her ports. They have bombarded more than one town, burning ships and houses, and all for a trifling reason.

One incident may show how aggressive, unjust and contemptible the English policy has been in that quarter. Some twenty years ago a strong naval force, consisting of English, American, French and Dutch men-of-war, bombarded the seaport of Simonoski, then under the administration of a Daimio, and reduced the whole town to ashes; and not satisfied with this, they exacted an enormous amount of money as an indemnity. After a gallant victory the booty was equally divided among the allied nations. Well, what was the cause of this affair? Why, simply because an American ship passing the port was fired upon by some reckless people. This action inspired the Englishman with great compassion for the American, and so by offering his lion arm he pursuaded the American and the other two parties to retaliate.

In this affair the American representative in Japan expressed his unwillingness to take such a step from the very beginning, although Uncle Sam was at length prevailed upon by John Bull.

Does a nation like the United States appreciate such a booty? At least President Hayes did not, since he recommended Congress to return this same money to its rightful owner.

Now you may be able to form a faint idea of what a great influence England has in the East.

Whatever the Japanese government proposes to do, it must first obtain the sanction of the foreign allied powers led by England no matter how unjust it may be, or whether domestic or foreign in its character. This is not all. England enjoys a monopoly in commerce and dictates her own terms.

Will Japan endure this foreign oppression forever? I cannot think so. The Japan of to-day is not the Japan of fifteen years ago. Having been a victim to all the ingenious tricks of her civilized visitors, she can tell you now what foreign intercourse means.

It means, in one sense, smuggling, cheating, robbing, and anything except humanity and justice. It may not be too big a story to say that Japan has made a creditable movement toward so-called civilization since she has opened her ports to foreign intercourse. Within the last fifteen years she has established a navy out of nothing. She has organized an army, adopting the most advanced systems. She has started a postal system and carried it to a wonderful state of perfection; built railroads and telegraph lines. And, above all, she has directed her utmost attention to education, establishing an immense number of schools. Education is the nucleus of civilization, and the only source from which human liberty flows. If Japan will continue advancing in the path of civilization as she has hitherto done, it may not be long before her sons shall draw their famous swords to extricate themselves from the oppressive yoke of English meddlesomeness; and the doctrine that "might is right" will no more be preached in Dai Nippon.

ONE RACKET.

RESPECTFULLY DEDICATED TO THE SUFFERERS, BY AN EYE WITNESS.

'Twas one of winter's coldest days—
The nineteenth of the year—
When nine small boys in open sleighs
Went forth to hunt for deer.

They caught them singly, two by two,
Yea, even by the threes,
All gay in hoods of red and blue,
Determined not to freeze.

And when the dears were gathered in,
Each to her proper sleigh,
The boys —though hunters they had been—
Were now as game as they.

'Mid bugle blasts and shouts of joy
And loud exultant yells,
The voice of every girl and boy
Unites in "Jingle Bells."

Thus gaily out from Amherst sped
The merry company,
Without a thought of fear or dread
To mar their jollity.

Each driver urged his chargers on,
The others to out do,
Nor ever thought to think upon
What he was coming to.

As on they went they reached the slope
That down to Hadley leads,
Out of their hearts now flew all hope,
But faster flew their steeds.

And while the natives stood and gazed,
And trembling, held their breath,
The luckless riders, much amazed,
Were nearly scared to death.

Past bridge and mill, past church and store,
On, past the blacksmith's shop
One load of youngsters went before
The "animiles" would stop.

Then, turning round, they started back
To find the other sleigh
Which waited for them on the track
A half a mile away.

Again they start with laugh and shout,
The bugle blowing loud,
And all the Hadleyites turn out
To see the reckless crowd.

The second load, quite undismayed,
And not to be outdone,
Lead boldly on, not one afraid
To have his share of fun.

They have it soon; for on the brink
Of a ravine most deep,
The sleigh upsets—the party sink
In one promiscuous heap.

No one is hurt, no one alarmed,
So soft the bank of snow;
They extricate themselves unharmed
And off again they go.

Upon the ice they safely passed
Connecticut so wide,
And into Hatfield rode at last
Like joy personified.

The Hatfield cream'ry first they saw
And stopped to warm their toes;
For that's what creameries are for,
As everybody knows.

Then back unto the old hotel
The merry party ride,
All feeling excellently well
And glad to get inside.

A cozy room, the cheerful roar,
That speaks a great wood fire—
A lampshade smashed to bits—what more
Could any one desire?

They play the games they know so well,
Just as they always do,
Till summoned by the supper bell,
They march out two by two.

Then down they sit—a hungry brood—
Nor falters any one
Till to the several kinds of food
Full justice has been done.

And when they've eaten all they can,
They rise up, one and all,
And each young lady with her man
Strikes for the dancing hall.

They trip the light fantastic *heel*
In Lanciers, Ugly mug,
Dan Tucker and Virginia Reel;—
In Waltz and Racket,—hug. *

And then they all go through the mill
As Aggie Freshmen do,
And take the military drill—
Inspection and review.

And when the moon is up a ways,
Then too—as is quite fit—
Their time is up. A while they gaze,
Then all "git up and git."

The teams are brought, they all pile in;
They're off with songs and jokes.
They wake the echoes with their din,—
They also wake the folks.

So much delight, 'twould really seem,
Has turned one driver's head;
For when he ought to reach the stream
He's somewhere else instead.

But, guided by the distant sound
Of voices far away,
They tumble out to turn around,
And seek the other sleigh.

The other sleigh they find at last,—
Again it's been tipped o'er;
It's occupants are all stuck fast
Just where they were before.

Again they're all fished out unhurt;
Again they're settled down,
And, starting homeward with a spurt
Soon reach the "College town."

The day is done. The whole thing seems
A fancy as it whirls
Through each boy's brain, who sleeps and dreams
Of Hatfield—and the girls.

* N. B. This last is put in simply for the sake of the rhyme, and should cast no reflections upon the perpetrators' motive for dancing.

MOLECULES.

—Owing to the bad weather the flowers are all late, and so are the Seniors' pictures.

—Rather than lose the time, the battalion has been drilling in the chapel on rainy days.

—Verily, verily, I say unto you that wheresoever a hen scratcheth, there she expects to find a bug.

—And still they come! Eighty-two has planted fifty elms along the west side of the county road.

—Eighty-one have their class supper at the Massasoit house, Springfield, on the night of the 23d.

—Theta Delta Chi was the first college fraternity to publish a paper. It was issued annually—for one year.

—The military essays went all the way to Atlanta, Georgia, to be examined and ranked by a board of officers.

—'83 has been surveying for a "proposed pond" which might be made by building a dam just above the culvert.

—We congratulate all who read the M. A. C. items in the *Record* upon the exodus of the correspondent who furnished them.

—Senior vacation began on Friday, June 10th, and was terminated on the 20th by the written examination in agriculture.

—Thanks to the new lawn mower and the public spirit of the students, the lawns about the college buildings are much improved.

—With the ripening of the strawberry crop there comes a rush at the plant house and a consequent increase of wages to fifteen cents per hour.

—Two of our embyro farmers are raising an acre of potatoes and cabbages on their own account. The crops are doing well and promise a fine profit.

—There is nothing certain but uncertainty, and there is nothing so uncertain as archery. Therefore we conclued after two months practice that archery is certainly uncertain.

—Our Jap sails for "Dai Nippon" next month in company with several of his countrymen, one of whom has just graduated from Harvard, and another from the Naval Academy at Anapolis.

—She was decorating her room with pictures, and she perched his photo up on the topmost nail; then she sat down to admire her work and remarked quietly: "Now everything is lovely and the goose hangs high!"

—Warm the body by healthful exercise, not by hovering over a stove. Warm the spirit by independently performing some noble deed, not by following the example of fellows no better than yourself.—*Thoreau.*

—"There are hopes that play round her like fires on the mast," is the way we wrote it. "There are hopes that play round her like flies on the mush," is the way the printer set it up. The way in which the printer got set up does not appear.

—The more fires, the more improvements. Phœnix Row was the last to be benefitted by being burned. Now, if some one would only set fire to the sidewalk between the college and Mr. Fearing's, we might have better walking.

—The Freshmen seem to be capable of bracing in base ball if in nothing else. They have beaten the Juniors and played two games with the High School nine, the first of which was a tie; the second was won by the Freshmen by a score of 5 to 3.

—There was a knock at the recitation-room door and a Senior went to answer it. He found a sub-Freshman who extended his hand saying, "How do you do, Professor G——? My name is ——, and I—I—" but the Senior smole and the sub-Freshman tumbled.

—The Rifle Association shot for prizes on the 13th inst. In the team, the first prize of $3 went to H. H. Wilcox, '81; the second of $2 to J. E. Paige, '82. The three prizes offered for the highest scores in the second class, which included all members except the team, were taken by H. J. Wheeler, '83, W. A. Morse, '82, and J. E. Wilder, '82. The scores were counted upon the Massachusetts target instead of the Creedmoor as heretofore. The following is the score of the team and winners of prizes in the second class:—

	Muss. Score.	*Creed. Score.*
H. H. Wilcox,	103	46
J. E. Paige,	96	42
B. Hashiguchi,	93	40
W. H. Thurston,	91	41
S. C. Damon,	87	39
F. H. Fairfield, absent,	..	..
H. J. Wheeler,	80	39
W. A. Morse,	79	38
J. E. Wilder,	76	39

PERSONAL.

'71.

W. H. Bowker is on a two months business trip to Germany, expecting to return the 1st of July.

Wm. Wheeler was elected a member of the Board of Trustees last June, thus becoming the first alumnus elevated to that position.

L. A. Sparrow has been compelled to temporarily resign his position as chemist on account of ill health.

H. L. Cowles has taken unto himself a wife, and has been elected one of the executive committee of the Hampshire Agricultural Society.

A. D. Norcross has received his commission as Post Master at Monson.

G. H. Allen has been promoted, and is now located at Winfield, Kan.

'72.

Prof. S. T. Maynard recently met with a great bereavement, the loss of his wife, who died May 1st.

R. B. Grover has just graduated from the Andover Theological Seminary.

'73.

S. S. Warner has formed a partnership at Northampton in the fertilizer business.

D. P. Penhallow has resigned his professorship at Sapporo, and is continuing his botanical researches at Cambridge, and is to deliver a course of lectures on physiological botany before the Peabody Institute.

J. H. Webb is married and continues the practice of his profession at New Haven.

Chas. Wellington is still chemist at the U. S. Dept. of Agriculture, but contemplates a protracted visit to Germany for the purpose of continuing his studies.

'74.

E. H. Libby, who for some time was engaged in Agricultural Historical work at the U. S. Dept. of Agriculture, has accepted the position of Editor-in-chief of the *Farmer's Review*, published at Chicago, one of the best agricultural journals of the country.

A. W. Dickinson is collector of the port of Jersey City.

'75.

E. B. Bragg is consulting chemist and purchasing agent for the Bowker Fertilizer Co., and is located in New York City.

A. A. Southwick has accepted the position of Professor of Agriculture and Farm Sup't., at Talladega University in Alabama.

'76.

T. E. Smith is again Instructor in Elocution at the M. A. C.

D. O. Chickering was so unfortunate as to have his farm buildings all consumed by fire during the past spring; the loss was considerable, though largely covered by insurance.

H. G. Wetmore has completed his year's appointment as house surgeon at St. Luke's Hospital, N. Y., and has entered upon the practice of his profession in that city.

'77.

Atherton Clark is proprietor of a gold mine at Nevada City, Cal., and is occupied in superintending the development of the same.

D. H. Benson has accepted the position of chemist to the Bowker Fertilizer Co., at their New York division.

G. E. Nye is located at the Union stocks yard at Chicago.

'78.

The first reunion of the class was largely attended Tuesday eve., June 22d.

H. G. H. Koch returned from Germany last Sept., but owing to changes resulting from circumstances unforseen was obliged to temporarily relinquish his intention to settle on a farm, and has formed a partnership with his father in the dry goods business, at the old stand on 6th Ave., New York.

F. H. Osgood graduated with honor at Edinboro' and has established himself as a veterinary surgeon at Springfield.

Prof. C. S. Howe has resigned the principalship of the Albuquerque Academy, New Mexico, and has opened an assay office there.

J. N. Hall graduated at the head of his class of nearly a hundred at the Harvard medical school, and has been appointed House Surgeon at the Boston City Hospital.

J. H. Washburn will enter upon a post graduate course, under Dr. Goessmann, next term.

X. Y. Clark has forsaken his fellowship at John Hopkins and returned to Cal.

'79.

S. B. Green took a post graduate course at the college during the winter term, and is now engaged with Mr. J. J. H. Gregory at his seed farms in Marblehead.

W. A. Sherman graduated with distinction from the American Veterinary college in February, and has entered the Long Island medical college, that he may also receive the degree of M. D. before entering upon the practice of his profession.

'80.

W. G. Lee is one-third owner of, and is superintending the "Amherst" gold mine at Georgetown, Cal.

A. H. Stone has finished his course with Prof. Goodell and is studying Theology.

THE CYCLE.

Supplement.

Containing an account of the Exercises of Commencement Week,
List of Prizes, Etc.

COMMENCEMENT EXERCISES.

Monday morning, June 20th, ushered in the Commencement week of the Mass. Agricultural College. For some time the students had entertained the thought that possibly this anniversary might become a failure so far as the military feature was concerned, for uncalled for rains which for the past few weeks had made college life so dreary and almost a burden. But when the sun rose clear and bright on Monday morning this idea was quite if not wholly banished from mind. The previous week had been spent in putting the grounds in order and placing things in and about the college in tidy condition. One thing neglected, however, was the decoration of the hall. In former years flowers were artistically arranged about the room and the walls were decorated with evergreens, which indeed made all cheerful and becoming. But not as much trouble as usual has been taken this year in decorating, hence the gloomy appearance of some parts of our college chapel. We trust in years to come, at these annual exercises, greater interest will be taken in this direction. The former custom has been for the Seniors to have their final examination in agriculture on the last Friday before Commencement. This year it was postponed until the last Monday of the term.

On Monday evening a large crowd gathered in College Hall to hear the Farnsworth Prize Speaking, exercises commencing at eight o'clock. The speakers were, Freshmen:—Henry E. V. Goessmann, Charles R. Kenfield, Elisha A. Jones and George Cutler, Jr. Sophomores:— Charles W. Minott, Homer J. Wheeler, Joseph B. Lindsey and Charles T. Conger. The music furnished by Meekins' orchestra of Northampton was good and highly appreciated. After the prize speaking the members of the D. G. K. Fraternity retired to the Aleph Chapter House to hold the annual convention of the fraternity, after which the members repaired to the dining rooms of M. R. Muzzey to partake of the annual banquet. The occasion was an enjoyable one, twenty-seven members being present. The toasts, merry songs, jokes and pleasant stories will long be remembered by those who were present.

The Q. T. V. and Phi Sigma Kappa societies also held their annual conventions on Monday evening, after which the members of each society gathered around the festive board. The former held their annual banquet in the parlors of the Amherst House, the latter in their society room. The sight of old familiar faces brought back many pleasant associations. The hours sped swiftly by. Old time songs were sung, past experience related, and all went merry as a marriage bell.

TUESDAY.

Early on Tuesday morning Lieut. Morris and eight men started with one of the twelve pounders for Belchertown to assist the reunion of the tenth regiment. Mr. Myron Walker, formerly a drummer in that regiment had generously offered to pay all expenses if his old comrades in arms would hold a grand reunion at his native town, the Aggie battalion was cordially invited with expenses paid. But the senior officers were unable to attend on account of the public examination in agriculture, Lt. Morris however chose eight men from the Junior class, put one of the cannon on the cars and left Amherst for Belchertown on the early train to fire the governor's salute.

The examination of candidates for admission to college took place at 9 o'clock, at the Botanic Museum. The outlook for a good class next year is favorable. At 10 o'clock, the public examination of the Senior class in agriculture for the Grinnell prize took place in the Chapel. The judges were Dr. Lynde, Dr. Jewett and Mr. Wheeler of the Board of agriculture.

The topics for examination were:

Soils.—Composition and origin of Soils; Practical varieties of Soils, their characteristics and adaptations; Soil tillage, the methods and effect of the same.

Plants.—The Structure of Plants, the organs of plants and their offices; Composition of Plants and the sources from which the materials of their structure are obtained.

Soils and Plants.—The effect on the soil of *natural* plant growth, effect of artificial production; the condition of an exhausted soil; Fertilization, what agents or substances may be employed for the purpose, sources from which they may be obtained, and their influence on soils and plants.

Farm Management.—Farm economy; farm accounts; selection, division, fencing and cropping of

a general farm; the influence of agriculture on national character, wealth and prosperity; growing grain as a market product and its effect on the farm; the fruits of the farm; the demand for cattle and their products, and the source and extent of the supply; improved breeds of cattle, their characteristics.

Tuesday afternoon, the first public exercises of the College Shakespearean Club took place in the college chapel. The oration was delivered by Rev. Elias Nason of Billerica. The address showed careful thought and study. The speaker dwelt forceably upon the idea that all mankind are nothing but copyists. Every new invention, every line of poetry, are only a repetition of what has long gone before. Every word spoken was strictly to the poem, the clear sparks of wit, and striking illustrations were highly appreciated by all present. After the oration, a poem was read by C. P. Bingham, after which Chester Damon read a short sketch from one of Shakespeare's plays. The music was furnished by Meekins orchestra of Northampton. In short, every part was a complete success.

On Tuesday evening, a goodly company, citizens and students attended the levee at President Stockbridge's. The occasion was made more attractive by the presence of His Excellency the Governor and staff, and many other distinguished personages, a few short but very enjoyable hours were spent in renewing old and forming new acquaintances.

The class of '78 held its first reunion at the Amherst House at 11 P. M., and after doing credit to themselves and Landlord Conkey at the table the chairs were shoved back, and the hours passed quickly away in recalling old times and bygone incidents of college life. The members related their experiences of life during the interval since the parting, three years ago, each confessing that which was confessible, and then, after many a song and story, elected officers for the ensuing three years as follows: President, S. D. Foote, of Springfield; vice-president, J. N. Hall, of Revere; secretary and treasurer, H. E. Stockbridge, of Amherst. Then with kind good wishes and hand-shakes they parted, till the next triennial.

WEDNESDAY.

The alumni meeting was fairly attended, and after much harmonious discussion adjourned with no action, except to accept the treasurer's report and to re-elect the old board of officers.

At ten o'clock the Governor was escorted by the corps of cadets to the parade ground. The salute of seventeen guns was fired. Inspection of cadets by His Excellency, the Governor, mortar practice and battalion drill aided materially in making the exercises interesting.

At 2.30 P. M. the graduating exercises began in the chapel. The speakers were as follows: Arthur Whitaker, Needham, A Plea for Free Ships; Henry E. Chapin, Springfield, Modern Despotism; Clarence D. Warner, Granby, National Dangers; Edward B. Rawson, Brooklyn, N. Y., Justification; Hiram M. F. Smith, North Hadley, Knowledge and Wisdom; Joseph L. Hills, Boston, Chemistry in Agriculture; Charles L. Flint, Jr., Boston, The Spirit of Invention; Elmer D. Howe, Marlborough, The End of the Gladiatorial Games, with the valedictory addresses.

At the close of the literary exercises, Gov. Long being obliged to leave for Goshen, Hon. C. E. Fitz of the committee, acting in his stead, addressed the graduating class and presented the diplomas, after which President Warren delivered a short address to the matriculants of Boston University and presented the diplomas of the college.

THE PRIZES.

Farnsworth Rhetorical Prizes. — Gold medals to Charles T. Conger, New York City, of the Sophomore class, and George Cutler, Jr., Amherst, of the Freshman class. Silver medals to Homer J. Wheeler, Boston, of the Sophomore class, and Elisha A. Jones, Rockville, of the Freshman class. Here we should be allowed to state that in awarding the above prizes injustice was shown. We do not mean to say that this was intentional on the part of the committee, but the popular mind and talent of the audience gave the gold medal to Joseph B. Lindsey of Marblehead. While Mr. Lindsey is not favored as one of the fortunate recipients, yet he bears away the honor of having earned the prize which was given to another.

Grinnell Agricultural Prizes.—First prize of $50 to H. H. Wilcox of Nawiliwili, S. I., and the second prize of $30 to A. Peters of Boston.

—Many of the students have been engaged for the season as table waiters at the White Mountains and the popular resorts at the seaside.

—Mr. Wilcox and B. Hashiguchi of the Senior class are about to leave the United States. Mr. Wilcox returns to his home in the Sandwich Islands and will engage in the sugar industry; while Mr. Hashiguchi goes to Japan to elevate the agricultural interests of his native country.

THE CYCLE.

VOL. IV. TUESDAY, JUNE 20, 1882. NO. 1.

PUBLISHED BY THE ALEPH CHAPTER OF THE Φ. Θ. Χ. FRATERNITY, MASS. AGRICULTURAL COLLEGE.

ORDER OF EXERCISES.

For the Twelfth Graduation Anniversary, June 18, 19, 20, and 21, 1882.

SUNDAY, June 18.—Baccalaureate Sermon in the College Chapel at 10-30 A. M., by President Chadbourne.

Address before the College Christian Union in the Chapel at 3 P. M., by Rev. Doctor Riddle, of Hartford Theological Seminary.

MONDAY, June 19.—Farnsworth Prize Declamations in the Chapel at 8 P. M.

TUESDAY, June 20.—Public Examination of the Graduating Class in Agriculture for the Grinnell Prizes, in the Chapel at 10 A. M.

Exhibition drill of Junior classes at 2 P. M.

Reading of the Prize Military Theses in the Chapel at 3 P. M.

Battalion Drill and Review of the Corps, by His Excellency the Governor, on the Parade Ground at 4 P. M.

President's Reception, at the Amherst House, 8 to 11 P. M. All friends of the College are invited.

WEDNESDAY, June 21.—Alumni Meeting in the Chapel at 8-30 A. M.

Graduation Exercises in Amherst College Hall, 10 A. M.

Cycle Supplement.

The CYCLE Supplement will be issued at the close of the graduation exercises on Wednesday. It will contain a complete account of the Commencement exercises and list of prizes. Do not fail to purchase a copy. Price two cents.

June and Commencement bring in their train the CYCLE, for which we feel assured a hearty welcome waits. Its years are few; the class, which to-day leaves the arms of Alma Mater, was already well on its way towards the goal it now attains when our paper first saw the light. But in the experience of three years we have recognized the need of such a publication at this time, and in the light of that experience we trust that we are older than our years.

A word to those who meet us to-day for the first time. Our old friends need not be told that the CYCLE does not subserve to interests narrower than the upbuilding of our College and the promotion of its aims; but to those who have hitherto been strangers to our motives, the three letters at the head of the page would naturally suggest an end less broad. To such let our pages speak; we aim at producing a truly representative College paper, and publish the CYCLE, not in the interest of a clique, but of the whole body of undergraduates.

The content's of to-day's paper are far from meeting our conception of the ideal, but we hope that they may at least bear comparison with our former labors; especially would we call the attention to the interesting letter from Deutschland, from the pen of Mr. Stockbridge, whose connection with the University of Göttingen enables him to know whereof he speaks. We regret that our name is not Tennyson; but we call ourselves Smith, and therefore are unable to brighten our pages with original gems of poetry,—for who ever heard of a poetical Smith? But we won't let that trouble us.

Our only predecessor in journalism at M. A. C. was the *Register*, issued at Commencement for a few years by each Senior class, but in '76 the publication ceased through lack of encouragement; but since the publication of a Commencement paper under our auspices, we have not lacked the cordial support of all. Our thanks can only be voiced by increased zeal in pushing on towards the goal of our ambition.

We do not claim any great degree of wisdom, nor do we include a budding Macauley within our ranks, but we present you a student's paper, a mirror of his thoughts and life, and ask for it your kindly indulgence and your friendly criticism.

> "In every work regard the writer's end,
> Since none can compass more than they intend;
> And if the means be just, the conduct true,
> Applause, in spite of trivial faults, is due."

It would seem that to chronicle the advent of a new president is to become a perennial subject as a CYCLE editorial, for in this number for the third time in four issues is a change in college administration to be commented upon. With no disparagement to his immediate predecessors, we may say that in President Chadbourne we have a man, and ideal head. It is doubtful if another could be found to fulfill so completely the requirements of the position. Bringing with him a national reputation as an educator and leader, a close student of both science and literature, thoroughly interested in the institution from its foundation and already having filled its presidential chair during its infancy, Paul A. Chadbourne is the man of men for President of M. A. C. During his presidency of Williams College, he raised the institution to its present high standing and in seven years doubled its number of students. At Williamstown, however, he was working on a line parallel with Harvard, Yale, Amherst, and the many literary colleges of New England, and naturally he did not draw as many as if the field had been less crowded. But M. A. C. stands alone, the only independent institution of its kind, save one, in New England, and with a prestige already powerful. Is it not reasonable to suppose that like good fortune may knock at our door, that our college will also arise to more active life, its halls reëcho to the feet of new and larger classes, its grounds be beautified with new buildings, its teaching force be augmented, and that it will become a far more potent factor in the agriculture of the State than hitherto? May our new President long be spared to us!

One of the prominent features of the past year has been the course of lectures inaugurated at the college on topics akin to agriculture. Although entirely a student movement, they were first-class in their character and of great benefit to the audiences. Ia is to be regretted that the farming community of the vicinity did not more fully recognize their value, and turn out in better numbers, Mr. Gardner's farm architecture lecture being the only one in the course attended by more than a handful of outsiders. The lecture was one of the last of the winter, and probably opened the farmer's eyes to what he had lost. Revive them again next winter. Larger audiences will no doubt attend. Speakers are plenty and willing to come if the students will back them up. Keep the ball rolling!

The world moves, and the assembled wisdom of Beacon Hill has at last recognized the fact. The experiment station bill has passed and received the Governor's signature; to-day its trustees are elected, and on the 1st of the coming month the instalment of $3000 for its equipment is to be drawn from the State treasury and active preparations to be commenced.

Massachusetts, proverbial as the vanguard of the States in the march of human progress, has lagged behind her sisters in the promotion of agricultural research. Connecticut, New York, New Jersey, and North Carolina have taken the lead, and finally after three years of useless delay, the inevitable has occurred, and the Bay State has wheeled into line with the others. The station is an established fact; but the cutting down of the appropriation will seriously cramp it and effect its work. But considering the heavy State tax of the current year, more could scarce be expected; and, too, the yearly $5000 will serve as an entering wedge for larger appropriations in years to come, when the station's work has demonstrated its usefulness.

The small appropriation increases the difficulty of the choice of director, for full half the amount would be no more than a fair compensation to the right man. The director must either be paid but a nominal sum, performing no other work than the business direction, or else it must be vested in the heads of the departments themselves.

A year or two's work, we trust, will open the legislative eye to the need of an increase of funds, and we yet hope to see the Massachusetts station stand on an equal footing with her richly endowed Connecticut sister.

The grading of the unsightly gravel pit which has so long been an eye-sore on the plant-house road is a move in the right direction. Some day we hope to see the effect of landscape gardening on the ravine. A few hundred dollars expended in clearing out under-brush, laying walks, and perhaps forming a little pond at its upper end, would wonderfully beautify the spot which, even in its wild state, is not unsightly. The crossing of the Mass. Central will injure it for such purpose, but at present it looks as if the class of 1900 would enjoy the park with no disfigurement by railroad bridge. Is there no one who is inclined to immortalize his name by developing our ravine and making it a college park? Don't all speak at once.

The Slough of Despond is passed. The skies are brightening. Even the legislative weathercock is pointing to the region of fair winds "and an appropriation." "There's a good time coming,"—though "long, long, on the way." The additional $10,000 endowment now well nigh assured, the back interest, which according to Attorney-General Marston is due the college, the coming experiment station, the new drill hall, the repairs appropriation of $4000, and last but far from the least, our energetic president, all within a few months, have loomed up before our eyes long unused to such sights. There seems to be an advance all along the line and a general development of the possibilities of the institution. But the end is not yet. We are sadly in need of a good library, the cabinet should be increased in certain directions, especially those which pertain to the special work of the institution, a good fire-proof building, combining under one roof a hall for graduating exercises and cabinet room is we hope in the future tense; and as the president desires the residence of all new professors on the college farm, new houses will become a necessity. Like Oliver Twist, we ask for more. Thank you for past favors, and there is plenty of room for more of them.

It seems to be a general opinion among alumni and students that the standard of admission should be raised. This can hardly be done directly without severing the institution from the class which supports it; the ordinary school education of the farmer's son will not admit of a more difficult examination. The change, if necessary, must be brought about in an indirect manner, and it seems to us, and we believe that we voice the spirit of the college, that the desideratum were best attained by a slight modification of the curriculum.

The material which has hitherto presented itself for admission to the Freshman class has been of such diverse character that the work of the first year has been largely lost to many, to whom it was not preceded by the instruction necessary to the complete comprehension of the studies. Would it not be well to devote Freshman year largely to making a uniform material? If it were essentially a preparatory year, laying a solid English foundation and broadening the mind, the student could grasp with more certainty of retention the more difficult studies to follow.

A marked imperfection in our curriculum is the arrangement of the course in chemistry. Immediately on entrance the student, with no previous training in this line, is asked to grasp the intricacies of chemical philosophy, which to the mature mind is no small task. Having listened two term's lectures he is just beginning to gain an insight of the subject when it is stopped entirely for two years, and, when in Junior year it is again renewed, the Freshman lectures are forgotten and almost an entire novice, he starts in on analytical chemistry, and organic chemistry lectures, both of which through lack of good foundation are rendered all but incomprehensible. There does not seem to be the proper sequence here. If the Freshman hours were spent in training the mind for the better retention of teachings imparted when more mature, and the chemistry transplanted to such a place in the course as would bring analytical work directly after the lectures, better results might be anticipated.

Such a modification of the curriculum as would make a rational sequence of studies, bringing descriptive science with tangible objects before the more abstract and applied sciences, such a modification as would lay greater stress on studies which cannot be pursued without a teacher, and only point the way to fields, where one's inclination need be the only instructor, these we think are worthy of consideration.

M. A. C. is an agricultural college, and as such should be a special school and should educate with the single aim of making specialists. Life is too

short to spend much time in acquiring ornament, or in training in any other direction than one's life work. In such an institution as ours natural history and its allied departments ought to claim preference over those less closely connected with its special work.

We would be the last to advocate the abolishment of what may be called the ornamental portion of our curriculum, and we appreciate its worth; but above it we recognize the prior claim of the sciences which form the special work of the institution.

We advocate no radical change; we merely outline what seems to us the course to be preferred:— a Freshman year essentially preparatory; agriculture and the sciences, the foundation stones of the course; a sequence leading from descriptive to pure and applied science; language, literature, and the more ornamental studies in plenty, but kept secondary to those which are the special work of the institution.

LICHT MEHR LICHT!

Now that a gas machine appears to be a thing of the near future at the college, and we hope that in addition to its use in the laboratory the dormitories may also receive the benefit, a short description of the manufacture of gas by the use of gasoline may not be out of place.

The gas manufactured in a gas machine is composed of hydrocarbons which arise from the aerifications of the naphtha or gasoline held in a large copper tank. The principle of the different makes is much the same, and their relative success depends upon the more or less complete intermixture of air and gas and upon the aerating surface. The intermixture is effected in different ways in the different makes, and it is on this that the claims of superiority of one over the other are based. One way is to pass air back and forth through channels, much on the same principle as the evaporating pan at the sorghum mill, these channels being half filled with burlap. The concussion of the air against the sides of the channels and its passage through the layers of burlap break it up and mix it with a considerable degree of completeness. Another method, recently patented, forces the air from a minutely perforated tube directly into a mass of woolen, which is the evaporating surface, with a considerable degree of force, and, it is claimed, produces a more complete aerification of the hydrocarbons.

The tank is usually sunk into the ground, while in the cellar of the building to be supplied, the air pump is situated which furnishes air to the tank, from whence a pipe runs to the building, conducting the gas. A large amount of gasoline, which is the lighter portion of petroleum oils, is placed in the tank at one time, and the evaporating surface is usually on the principle of a large float, which falls with the consumption of the liquid.

The worst feature of the product of gas machines is the inconstant results attained. The hydrocarbons are apt to form strata, the lightest and most combustible at the top; these are first consumed. The heavier strata give a less satisfactory light and finally a residue is left which affords little or no light and which has to be removed, an unpleasant operation especially when the tank is sunk into the earth.

In the same make that comprises the perforated air pipe within its mechanism, a jointed pipe always taking the same strata from a point just above the woolen evaporating surface is claimed to obviate this difficulty. Whether its success is complete or not, certain it is that inconstant results is the great bugbear of gas machine manufacturers, since each, while disclaiming any intention of running down rival companies, assert that their machine is the only one in which the results are at all constant.

It is claimed that the light from a gas machine is equal to from thirty to thirty-four candle power, considerably above the illuminatig power of ordinary coal gas, which registers about nineteen and a half. If a gas machine is placed in college grounds for laboratory use, it is to be hoped that students will use it also in their rooms. But little more expensive than oil, far more cleanly and convenient and giving a clear, white light, entirely smokeless, of high candle power, is it not to be desired for general use? North College is already piped, and South could be fitted up with but slight expense. A code of regulations regarding its use and dividing the expense could be easily arranged among the students, and it would be a great addition to their comfort.

At Wellesley the number of persons each member of the graduating class is permitted to have present on Commencement Day is limited to eight.

THE CRUSADE OF THE CHILDREN.

In turning over the pages of some old time worn history we often pause instinctively before a single line, where the ancient chronicler has made but a mere illusion to some subject, that we are sure would interest us much more than the long, dull pages that he has devoted to his many superstitious ideas and fancies, and for a time we turn the pages faster, hoping that the subject will again be taken up,—and then it passes from our mind as we demur on others before unseen, but which now look even more fair.

So many a traveller has (in toiling through the ponderous works of Caffari, Sicardi, Godfrey, and a host of others) loitered with fond interest over the allusions (for they are little else), that are found there of a Crusade undertaken by the Children of Christian Europe at the beginning of the 13th century; but a few there have been who, by patient study and toil, have placed before us a story of such interest, that by it alone, the name of the Crusades would live forever in the annals of the world.

What manifold associations cluster around that little strip of earth, on whose smiling shores the wavelets of the blue Mediterranean seem to break as softly as if they knew it was the bearer of all the earth's greatest and most loving scenes. The deep worn paths to it from all parts of the world, truly and forcibly tell the story of the multitude of weary feet that have toiled on to get a glimpse of its treasures.

To day we can almost hear the echo of the Singer's harp, the Prophet's lyre, and the Apostle's eloquence, and see afar the dim forms of Abraham, David and Isaiah, and lovelier and and loftier than all. the figure of that One for whom they looked.

What a history of peace and turmoil, of glory and shame. Across it has the tide of conquest rolled in every age, but to-day its blood enriched fields smile on the world as fair as they did on Ruth when she gleaned their fruitful ears three thousand years ago.

What romance is there that compare with the Holy Land's? It is consecrated by the lives that have illumined it, by the blood that has been shed for it, by the love that has been lavished on it, and for the Voice that has been heard in it.

When Peter the Hermit raised his voice to plead for the deliverance of these Holy lands, and when Pope Urban startled his hearers by his speech of Clermont, all of Europe rose with one accord and for the only time in the history of man, united in a common cause, and for the next two hundred years the angry waves of human life beat against the exhaustless banks of Asiatic power and vice as vainly as the billows of the sea roll one after another on some rocky coast. At times it did seem that they were to conquer, but again and again they were beaten back and the Mohammedans stood defiant and and unmoved at the last.

It was during this angry storm that that wave of child-life started on its sad career, and broke even before it reached the wall, over which it was to leap triumphant, and so it is not strange that the sound of their footsepts, or the songs of their youthful and unarmed battalions were but little heeded amid the din of the contending armies; but for us, they may be as interesting, with their unfought battles and unwon victories, as their hardier companions.

In the first year of the thirteenth century was born in the little town of Cloyas, in the Loire valley, a poor shepherd lad, who was to spread his fame through all christendom before he was thirteen years of age. He is known by the name of "Stephen of Cloyas," or the "Boy Prophet," and by his wonderful powers of speech and eloquence stired the hearts of christian children, to such an extent, that within a few months from the time he started on his mission over one hundred thousand children, between the ages of ten and fifteen were ready to start on a crusade to the Holy Land. No opposition could stop them, and as they went in bands from place to place, singing hymns and proclaiming their appropriate scriptural text, "Out of the mouth of babes and sucklings hast thou ordained strength, because of thine enemies, that thou mightest still the enemy and the avenger," it seemed as if all the people had gone mad and that every child in Europe was to join them.

Their youthful host was divided into three armies, two starting from Cologne under Stephen's apostles and the other from Vandome under Stephen himself. The journeyings and fate of the two German armies was the same, one starting for the sea by the pass of Mt. Cenis and the other by that of St. Gothard.

What a sight these grand, old, Alpine monarchs

must have seen from their hoods of mist and snow, as they gazed upon these child-like hordes trooping towards them from far off lands, with their gay banners and songs, and toiling up their rugged sides.

We are told that their sufferings were terrible and that many of them, worn out with want and fatigue, and no longer supported by feet unused to the rough rocks, and unprotected from the weather, sank down for their everlasting rest amid Alpine snow and ice. Those that reached the summit however, started on their downward way to the sunny land of Italy, and the road that they were so sure God would make for them through the great sea to their cherished land of Israel, with light hearts, but they were doomed to disappointment, for their way was beset by every trouble that the hostile inhabitants could heap upon them, and they reached the sea but a small remnant of the gay throng that had left Cologne such a short time before.

Now their hopes were again raised as they waited for the morrow, when they would start on the dry road to Palestine, but when by the early morning light they looked with despair on the blue waves dancing as they did on the yesterday and seeming to laugh at them in derison, they at last saw how terribly they had been deceived, and broken in spirit and body few of them ever find their home and none their land of promise.

The journey of the French children under Stephen starting from Vandome was however much different, they encountered no mountain passes and no hostile inhabitants. All the way their road lay through a pleasant country, peopled with friends, and so they reached Marseilles with almost their entire number of thirty thousand. But now troubles began, for as day after day the waters rolled between them and their goal they became downhearted and many of them had turned sadly back, when two rich merchants placed seven ships at their service.

With solemn prayers and chants, five thousand of them at length embark for the last stage of their journey, and as they sail out of the quiet harbor of Marseilles under the expiring rays of the Mediterranean sun, many a petition is offered for their safety. Darkness then closes in and as she spreads her sable mantle over land and sea, we lose sight of the children for many a long year.

As days, months and years rolled on, no tidings were brought of them and they were fast being lost to thought and remembrance, when an old monk, returning from a long pilgrimage, told a story that quickened the blood in many a christian heart. He told of the last journeyings of the children, how more than a thousand of them were shipwreched on the rocky island of San Petro, and how the remainder at last reached the longed for land only to become slaves and martyrs, and how the two kind merchants were in fact base deceivers whose only object was to sell these poor innocent children into everlasting slavery and abuse.

It is one of the saddest pages that history has to show:—with its bright heading of the gay troops of children thronging every highway to their cherished object, with their merry laughter and songs,—and with its sad sad ending of more than fifty thousand childless and bereaved homes. Within eight short months from the call of Stephen among his flocks by Cloyes to the scene of martyrdom in distant Bagdad this great throb of child-life rose and ceased—its work complete.

On the lone island of San Petro in the Mediterranean, there existed for many years a little church inscribed "Ecclesia Novorum Innocentium," and a name more appropriate, or one more replete with suggestiveness could not have been found. Here was established a monastary where the remembrance of the little ones was ever kept bright, and years passed away and generation after generation came to worship where their ancestors had played.

Many a boat laden with pilgrims had heard the wierd chanting of its monks wafted toward them on the evening breeze. But little by little it had become neglected, until the children were left to slumber on unminded in their silent tomb, but the little birds that have found there a nest and home, sing over them swester, purer requims than were ever chanted by forgotten priests.

Göttingen, Germany, May 26, 1882.

My Dear Cycle:—

Do you really, on the third anniversary of your existence, aspire to the dignity of a "Foreign Correspondence?" and before so implicitly trusting the conduction of the same to the writer did you fully

prepare yourself to echo the old maid's cry, "any one will do?" Trusting then to the enchantment of four thousand miles distance to soften and harmonize the lines, I offer an outline sketch of such phases of student life in this old University town as present themselves most promiscuously upon the American sojourner among these strange and wonderful German people.

In a valley among the most western of the Hoitz mountains many thousand years ago, before even the adventurous Northmen dreamed of a great continent in the Western Ocean was built the walled town of Göttingen, and here, for the past four hundred years, has stood the royal University of the old Kingdom of Hanover. The narrow limits of the original ramparts outgrown, a second circle of stone environed the town, winding irregularly around it for a distance of perhaps two miles.

This fortification, too, in its time outgrown, lost all usefulness with the advent of gunpowder and fell into neglect, but after the close of the seven year's war the ancient monument was fittingly and beautifully preserved, and stands to-day, supported by the old city within, and watched over by the new town without, forming a link rather than a barrier between them. The western embankment, standing within the wall, and formed of the excavations for the most, was smoothed, leveled and planted with double rows of lindens, forming a leaf arched promenade some thirty feet in width and higher than the eaves of the houses on either side. And to-day these leafy monarchs of more than a century's growth stand guard over the ancient wall, and shelter the citizens and students sauntering to and fro beneath their outstretched branches.

Within "*der wall*" plods and sleeps the old town which has hardly suffered a change in itself since C. Columbus, navigator, acquired fame if not not fortune by western *speculation*, though beneath its gaze have passed in review all the vicissitudes and changes of a decade of centuries. Here the streets are crooked, narrow, and go wandering about in a most bewildering, abandoned and reckless manner, never reaching the point they originally started toward and constantly at a loss as to the locality they had best attain.

Bordering them on either side are the old, old houses with their steep, red tiled, deep eaved roofs, their strange little windows and overhanging stories which bring the occupants of rooms on opposite sides of the street almost within handshaking distance of each other. Few horses are ever seen on these thoroughfares, but men, women, children and dogs play their part as beasts of burden, carrying on the traffic of a city of more than twenty thousand inhabitants.

In the center of the town is the *marketplatz* with its fountain and *Rothhaus;* and here, three times a week flock the women of the surrounding villages, bringing with them the produce of household and farm. And here they stand and offer their goods for sale, not each woman beside her wagon, or behind her counter, but every *Frau* beside her tote-basket, with which, strapped to her back, she comes winding over the hills, threading the shaded foot-paths descending in long lines into town with the early light, carrying burdens which Irish hod-carriers would "strike" to rid themselves of, and then, in the noon-day sun, toiling back up the hill sides to the *dorf* from whence she came, loaded down with supplies for home consumption or with the washings of student patrons.

From *Wall* to *Wall*, past the *Marketplatz*, winds the *Wender Strasse* with its narrow side-walks, tall spired churches and small shops. At the southern extremity, somewhat back from the street, surrounded by well kept and beautiful shaded gardens stands the chemical laboratory, while just without the northern wall stands the Auditorium or University proper, with its stone statuary and ancient lindens.

Beside these buildings, to the University belong the Aula, where all business between student and Institution is transacted, the *Kirche*, which students rarely attend, the beautiful new Zoölogical Museum with its incomparable collections, and the Library, unequalled by that of any University of Germany. And then the Agricultural and Medical departments each possess their own distinctive buildings and equipments. And Americans ought to note the fact, that, of all the many departments of this great University, none is so thoroughly equipped for its work or so bountifully supported as the Agricultural. Indeed, few American colleges are so richly endowed or so handsomely supplied with buildings and apparatus as the *Landwirthschaftliche Institute* of Göttingen.

The country surrounding the ancient town is

beautiful with an almost New England rugged loveliness; and the plain on which the city is built is not unlike the meadows of our own Connecticut valley. But nowhere do the hills rise with the self asserting abruptness of our "cloud capped granite hills," and their cultivated slopes and village crowned summits form striking contrasts to the vivid blue of the forest covered hills through which the monarch of New England rivers tranquilly flows.

Here in this ancient German *Stadt*, and in the midst of these surroundings twelve hundred young men are pursuing their studies. Let us glance at the characteristic traits of these students and note the chief points of difference between them and their contemporaries in America.

On the western side of the Atlantic the average undergraduate is, individually, hardly distinguishable from any other intelligent, well dressed and properly behaving young man. Alas, not so! the student forms a species by himself, never to be mistaken for any thing else of the genus Homo. As he promenades *der Wall*, or saunters down the *Weender* let us sketch him.

Preceeding him, and frequently also following at his heels, is a crop-eared, bob-tailed, as useful as ornamental, dog; the larger and uglier the canine, the greater the self importance of his owner. He generally wears eye-glasses, invariably carries a cane with which he is usually practicing some new schlage movement. He carries or wears a pair of, generally black, kid gloves in his left hand, and under the arm is a *colleg mappe* or manuscript, pen and ink case. In the hat on his head waves a feather, or if, perchance, he be a member of one of the half dozen different fighting corps, the hat is supplanted by a diminutive cap of gaudy hue perched on the back of his head. And last of all his face is seamed and scarred with the marks of many battles, the red lines crossing and intercrossing in every direction till they much resemble the railway route of a Cook tourist map. Yet this ferocious looking individual is exceedingly polite, and if accosed by a stranger is found not only most courteous, but extremely desirous of lending all the assistance in his power, often inconveniencing himself for the sake of imparting information, or rendering aid to the newly arrived foreign student, especially if the latter be an American.

Closely allied with his propensity for duelling is an inherent aversion towards giving half the sidewalk to any person he may meet. And should said person chance to come in contact with the scarred veteran, the event is immediately seized upon as just cause for a challenge, and from this slight collision proceed most of the famous student duels.

These contests are much more frequent than Americans at home, or even traveling in the country, are prone to believe. And among all the universities Göttingen takes the lead for the ratio between duels and number of students. So thus not a day passes without the appearance of some fresh victim grotesquely ornamented with courtplaster bandages, and surgeon's stitches.

But, however these combats may mar the faces of the participants, fortunately little danger is involved in them and they never result seriously. The vital positions of the bodies are thoroughly protected by quilted leather and only the faces are left exposed, which are the only points of the body aimed at, while the eyes and ears are covered with steel shields.

Fight as they may among themselves the German students never involve Americans in their quarrels. The immunity is doubtless due in a great measure to the respect for the national prejudice of Americans against such childish proceedings. But Germans have learned from experience that Americans are given to settling their difficulties when they occur and with weapons the use of which the Teutonic student is proverbiably ignorant.

The beer duel is another of the diversions of "Mein Herr Student." In passing along either of the principal streets of the town in the evening one's attention is suddenly arrested by the singing of a German glee by a score of frequently fine, male voices. A "*Kneipe*" is in full blast, and presently the air rings with the cry in measured accents of:—"*Eins, Zwei, Drei.*" A beer duel has begun. One, on the table; two, at the mouth; three, drink.

Now, how about the occupations of these young men. So much is written of the convivial habits praeticed in German universities, that Americans are prone to suppose that the German student finds little time for real study, and thus the genuine work of the Institution is undertaken only by the exceptional scholar.

Such, however is not the case, and though many

matriculants remain semester after semester seemingly accomplishing nothing, and never taking a degree, the average student is, withall, a hard working and diligent man. He has already reached the age of discretion, is at the University for a purpose, and he generally gains it.

Thrown almost entirely upon his own responsibility, held only in the slightest check by either civil or university government he is, with all his peculiarities, a gentleman, and a student, yet in every essential which goes to make the sum of the character he is as different from his American fellow as is the government under which he lives, and which is administered by a former Göttingen student, different in every respect from the great republic of the west. In years he may be anywhere from eleven to fifty, yet he is always a specialist, and though the Gymnasia from which he hails gives him a wonderfully complete course in the classics, he never possesses the general information for which the wide awake American undergraduate is proverbial.

Let us here note the differences between the University, its methods of instruction, and the characteristic American College. The institution is composed of several departments or "Faculties," each to a certain extent independent of the others, the government of which is vested in the Council elected by the several Faculties. The executive head of the institution is the Procurator, chosen at stated intervals from and by the united Faculties.

There is no prescribed course of study, but every student attends whatever lectures he desires, paying only for what he receives. Whenever he wishes for a degree he notifies the Procurator of the fact, and a time is set for the formality of examination before the examining board of the Faculty. The "Examin" is is conducted by the representatives of the department in which your work has been performed. If found sufficiently proficient the degree is conferred with due formality, provided you have taken lectures in three different courses and have proof of having given a stipulated amount of time to the study you have chosen.

Are you curious to visit a German lecture room? Here is what you would witness if once within its sacred walls. From half a dozen to a hundred men of all ages and nationalities seated on wooden benches and on other benches in front of them are pens, ink and paper, for your true German student never uses a pencil or copies his notes.

Promptly at the appointed hour, not a moment before, nor an instant after, the door opens, a spectacled professor enters, rushes behind the long table as though he had entered a race against time, and eternity was at his heels, spreads a thumbed and yellow document before him, braces with his hands against the edge of his desk, and with a preliminary "*Mein Herren*," charges into substance of the manuscript before him as though a horde of Frenchmen were encamped on its pages. No matter where in his subject the closing hour may find him, at the first stroke of the clock, he announces that: "From here we will proceed at the next lecture," closes his manuscript with military precision, and disappears behind the closing door.

What now is the character of the instruction thus imparted? It is so different from the curriculum of the American college that comparisons are hardly possible. You pupils of Dr. Goessman need not come to Germany for the mere study of chemistry.

The German professor may not be a great man, but he is always a careful one. Nothing done in the realm of his own department can escape his attention, and though the knowledge is offered to the German student, to their broadcast gathering, America furnishes her full quotia of facts and material.

Had you been here a few days ago you would have heared a learned professor, in mentioning the three highest authorities on a certain subject of great scientific and agricultural importance, give the names of *two Americans*.

And though M. A. C. has sent few graduates to foreign universities, she is much better known on this side of the Atlantic than many an institution of maturer years and greater pretensions. Some of the experiments conducted at our *Alma Mater* are perhaps even better known and appreciated here than at home, and more of them are accepted as authorative and conclusive.

Perhaps no better light than this, can be found in which to view the rude sketch you were promised, and so, without a single touch more it is yours.

S.

COMMENCEMENTS.

By "Commencement Exercises" is understood the delivery of theses and the conferring of degrees

upon the graduating men. The latter part is certainly a necessary accompaniment to the end of a college course, for it proves conclusively that the student has four for years struggled successfully against imposing recitations and examinations. But reading theses,—why should that always cumber a graduation exercise? Are writing and speaking the only things taught by our colleges? or is excellence in those branches of so much more importance than the rest that the men who attain it are the only ones fit to represent such an institution? No; it is because the pomp and circumstance of speaking are greater than can be obtained in any other branch.

But if it is more interesting what shall we say of the others? No one cares to hear any of the speaking except that of particular friends, and the more there is of it, the more tiresome the exercise becomes to all. Even the speakers themselves do not enjoy it. But they feel themselves doing something for their own honor and something to please their friends, and the thought cheers them. To all concerned, it is an irksome, tedious performance. Naturally a fellow's friends and relations desire to see him gain a share of Commencement honors, and no doubt from a sense of duty listen attentively to his speech, but who else cares anything for his ideas on the deep and absorbing topics usually treated? Who beside one's intimate friends remember a single word of what he has said or are not glad when he has finished?

Perhaps it is supposed that a thesis and the manner of delivering it represents the learning acquired in college. If that was the idea of the colleges that instituted this custom, then far do our commencements deviate from that principle. If this, an agricultnral college, was to act on the same basis a plowing match or a potato race would be a far more fitting close to its course. Of all studies pursued here, the least time of all is allowed to composition and elocution. Previous to their final theses the Senior wrote and delivered no more than three originals, and these with the corresponding Freshman and Sopomore exercises, occupied less than three days of solid work. The result of which meagre amount of labor is to be exhibited on Commencement day as the *tout ensemble* of their acquirements. It takes precedence over the year of French and German, of Chemistry and Botany, and even ranks above the "most ancient the most honorable and the most useful" science of agriculture.

It may be thought that a thesis written on one of these studies will illustrate the student's knowledge of the same, but what little knowledge of the subject is necessary for that purpose is so readily obtained at the time of writing that the only criterion by which Commencement speakers are judged is their power of setting forth their ideas and delivering them. A poorly written yet correct account of the structure of plants or an improved method of soil analysis would fade into insignificance before a glowing description of the Antarctic Continent or a pathetic narrative of the trials and vexations of the celebrated Jumbo.

It is evident that something of an injustice is done to the non-speakers. For besides the disappointment of seeing men whose standing and work in the class are far beneath their own receive all the attention and glory which everyone so enjoys, there is a feeling of unfaithfulness to friends who expect to see them graduate with honor. The men whose power of writing is limited simply receive their sheepskins, and deserving ones are not even favored with "*cum laude*" or "*summa cum laude*" of classical colleges.

If this system then is for the purpose of exhibiting our college learning it fails. If it is to honor and reward faithful attention to studies and marked advancement in the same, seldom does it accomplish its work; and if it is to form an entertainment for the friends of the college, what a lack of success is there! Already older institutions are condemning the custom, while those of a character far more literary than any agricultural college can hope to boast have learned the uselessness of college declamation in making good speakers, and have abolished such exercises almost entirely. The presentation of diplomas is the last meeting of the class as undergraduates. Why mar the final gathering of firm friends by petty jealousies and tedious harangues? Make it pleasant and agreeable to all, both students nd friends.

SUNFLOWERS.

I once lived in a family with an old yellow cat, whose many virtues and kindly disposition had won the love and admiration of all who knew her. I became deeply interested in this old yellow cat, and mourned for her long after she had been laid away

to moulder in the dust from whence she came.

But it was contrary to the fundamental principles of our domestic economy to support more than one cat a time; and rather than break a mother's heart by separating her from her offspring, we induced pussy and her five little black and yellow kittens to lie down in a pail of water. Then we buried them all together in a sunny corner of the back yard.

This was in early spring. The March winds moaned and April wept in fitful showers over the grave of our lamented pet. May came, and June with its quickening warmth, and even as the tears still glistened in our peepers, behold! a clump of Sunflowers, the largest and brightest the town had ever seen, grew up apace in the sunny corner where the little family lay sleeping. It was thus that I became interested in Sunflowers. Seeing the object of my affections metamorphosed, inspired me with a new love for Sunflowers as ardent as had been my passion for yellow cats. With what joy then do I hail the advent of the æsthetic movement! For now the despised and neglected Sunflower will receive its merited measure of honor and respect. Happy Sunflower! to live to see the day when its worth is appreciated,—unlike so many men of genius who become famous in the second or third generation, after being reviled and persecuted in their own.

And who that has seen a group of smiling Sunflowers peeping over a garden fence and bobbing familiarly to passing strangers, like a certain little widow of musical propensities,—who that has seen their good-natured nod has not returned the salute and felt that these were no ordinary plants, but beings of a higher order, worthy to be the chosen symbol of the advocates of every day art?

In the Sunflower, use and beauty are combined to a wonderful degree. Its beauty is apparent to all; and the ease with which it is drawn,—a circle surrounded by a larger circle of loops,—and its adaptability to all kinds of decoration, make it a favorite with amateurs and professionals alike. Even the hotel waiter, by arranging the small oval dishes of mashed potato, boiled onions, spring rooster, and so on, around the circular plate, can make the dinner table blossom as the Sunflower and thus lighten the burdens of poor suffering humanity.

The uses of the Sunflower are many and various. Every part of the plant can be utilized in one way or another. From the root a very valuable extract is made, which has been received with great favor by the medical profession. Its virtue is that it can be taken in large doses by anyone without affecting the system in the least; so that now with this new drug in the market, a doctor may safely prescribe enough medicine to satisfy the most rapacious of his patients.

The stems when cut into proper lengths and hollowed out find a ready sale among the children of the wealthy, who use the pieces for putty blowers. The leaves, dried, make an exeellent brand of tobacco, and are also useful when fresh and worn in the hat for preventing sunstroke.

The flowers, the most important part, can almost speak for themselves, at least anyone would think so who ever observed what intelligent countenances they have. For button-hole bouquets they are unsurpassed. The rays or ligulate flowers have been used with satisfactory results in making dressing gowns for canary birds who have lost their feathers. Carefully made these gowns can scarcely be distinguished from the natural covering of the bird, and will prevent its catching cold and loosing its voice in consequence while moulting, thus making it possible for it to warble its lay all the year round.

The seeds of the Sunflower have long been known to be edible, but until recently very little use has been made of them. As a substitute for apples they leave pie plant far in the shade. In the first place, growing as they do upon smaller trees, they are more easily gathered. They are quite as tempting as the green apple to the small boy, to whom anything stolen is sweet, and are much better for his peace of mind, it being impossible for him to eat enough of them to do him any good. For boarding house pies, Sunflower seeds excel all other mixtures; for they are cheap, and where there is so little inside it really makes no difference to the boarder what it is made of, while the occurrence of an occasional seed might lead one to suppose that apples actually had been used in its manufacture. The seeds, again, carefully peeled, may be ground into meal and fed to man or beast. Ground with the shells on, they make a very fine quality of Graham flour, scarcely distinguishable from the great and only original of that name. In a thousand other ways

they may be prepared for food, but we will not enumerate further.

Much has been said upon the origin of the name of this useful plant, and many theories have been advanced to account for its appellation. Some have claimed that is called Sun-flower because it is a flower which resembes the sun. This, however, is an unfounded assumption. The only point in which the two resemble each other is that neither shines at night. Otherwise they are totally different. The solar system has neither root, stem, or leaves—except when a stray comet makes a call and leaves—and the system of the flower comprehends no revolving orbs with attendant satellites. The flower itself follows the sun across the heavens, always looking toward it; and for this reason, others claim, it is named for the object it gazes upon so continually. This is a little nearer the truth.

There is a legend of the Sunflower which explains the matter in a highly satisfactory manner. In the tribe of Skweedunkts, which inhabited the wilds of Massachusetts long before the original John Smith made his famous "mash," there was once a fair haired Indian maid (no matter if you never heard before of an Indian with golden locks, the legend says there was one) who was very fond of the boys. She was always last to see the warriors depart for the hunt or to engage in deadly warfare with the neighboring tribes, and her eager eyes were the first to discern the returning braves when they brought back their game or long-haired scalps of the enemy. All day long when the men lounged around to see the women do the housework, this fair haired, dusky maiden lounged around to see the men. Not a cent did she care for the daughters of the tribe, but for a son, be he old or young, big or little, good looking, or ugly as a blear-eyed poodle, she had a full assortment of smiles and glances and never tired of bestowing them. No work would she do when the men were around, and while they were away she would only sit and watch for their return. But this did not please the wise men of the tribe, and after due deliberation they decided that she was more ornamental than useful, and by making a great sacrifice to their boss god, induced him to transform the maid into a flower so that she might let her eyes rest upon a sun all day and derive nourishment from the soil, instead of living upon the hard-earned rations of the tribe. So she became a Sunflower, and even to this day her descendants, with their dark hued faces surrounded by a fringe of golden hair, may be seen all over the land, watching the sun and doing no stroke of work. Let this, by the way, be a warning to light-headed brunettes and dark complexioned blondes.

The Sunflower is very easily raised. By giving it a good start on one or two yellow cats and a few black kittens—to make dark, rich centres—and treating it thereafter with studied neglect, anyone may secure a good crop. While growing, it makes an inoffensive pet for the children; it is much cheaper than a dog, as it eatsbut little and never kills sheep; it is better than a cat, for it does not scratch and never gets into noisy discussions with its friends on the back fence. In youth, maturity and old age, it is a trusty and elevating companion for mankind. It is beautiful, useful, and cheap. Let us all raise Sunflowers!

ROTATION OF CROPS.

The great agricultural problem is to obtain a maximum crop from the minimum of land. In the early times or in countries where land is plenty and rich and people few, the earth supplied its inhabitants food with but little trouble. Increase of population has, however, compelled the practice of a higher farming,—a scientific agriculture.

At first but few crops were used as means of alimentation, and the same piece of land which one year had produced excellent grain, the next would decrease in yield, and finally the result would be that no grain could be raised upon it. Then the farmer would say that the land was tired and needed rest; if, however, a different kind of plant was put upon it, a good crop would be produced. This puzzled the farmer, for he could not understand how a tired soil was able to produce not the same family of plants, but only one of a different kind.

The first idea was that plants were able to throw to the soil excretions of any kind of matter not fitted for their nourishment, so that the next crop would find the soil in an unfit condition for its growth. This theory, confirmed by such names as Decandolle and Humboldt, was highly commended. Many experiments endeavored to prove it. A plant was

made to grow with part of its roots in a solution of acetate of lead and another part in water, and in a few days that substance was found in the water. Another plant was made to grow in sand with arsenious acid in it, and when taken and planted in pure sand arseniate of soda and potassa was found in it. It was also known that roots will work their way through rocks, and it was thought to be the action of acids formed in them. Before long, however, better reasons were given for the decrease of plant production, and this theory was abandoned.

Chemistry, the helper of every science, also came to lend friendly aid to agriculture. The analysis of different plants showed varying composition, and as their constituents mainly came from the soil, it was supposed that a tired soil could not grow plants, because it was exhausted of plant food fit for a certain crop, but that it would be able to furnish it to a crop made up of different constituents.

The form of roots and the way in which they feed upon the soil has much to do with a successful yield, because a crop feeding on the upper part of the soil will exhaust it there, but will leave plenty of material for another which feeds lower down, or whose roots will penetrate deeper.

To show the importance of change of crop, we know that we may give plenty of plant food to the soil, but we will not get so good a crop as that of the first time, and that the growing of a different plant on the spot will do a great deal of good.

This last case is more common in market gardening, and Mr. Henderson advises the change from one kind of fertilizer to another, and says that after two or three years the same kind will not produce very good results.

This changing of crops is called rotation. When land is plenty, it is a good practice to allow it to rest after a few crops, because the plants growing on it will prepare plant food, and when plowed in will act as green manuring. The economy of rotation of crops is in this saving of manure, for by it the farmer is able to take from the soil the different kinds of plant food in certain proportions, leaving always a supply for another kind of plants. We know that plants do not feed only on material from the soil, but that a great amount of plant food is taken from the atmosphere and also that the soil absorbs material from the same source; the amount existing insoluble in the soil is thereby rendered available to the plant, so that a rest to the soil or the growing of a crop not to be taken away will make it richer or will essentially be a fertilization. Clover, it is said, feeds greatly from the atmosphere, so it is considered a very good plant to improxe the soil.

Rotation of crops was well understood by very ancient writers. Among the Romans, Cato, Virgil, Varro, gave laws about it, and although they were ignorant of the true reason, they were aware that better crops could be obtained by such means. We observe every day a complete and natural rotation in our pastures, where one year a kind of plant abounds and in the following one a different species. There are many different kinds of plants in an acre of land that take very different proportions of plant food, thus balancing each other and keeping the soil in good condition.

One very good reason for rotation of crops is that every plant has its enemies in other plants, insects and animals, and therefore if we grow the same crop on the same land for many years, the weed peculiar to it will increase to an injurious extent and will often destroy an entire crop. The fickleness of our climate makes rotation of crops difficult to the farmer, but so many are the crops to be raised that he can always find plants adapted to the condition of the soil or season.

Rotation of crops should be done in an intelligent way, a farmer knowing the amount of plant food in the soil and the amount of manure he has applied and its value can very easily keep up the condition of his land, and even improve it. It is not well to follow rules blindly, for they are generally laid down for certain locations and soil, but to have a table of the analysis of different crops he wishes to grow, and then alternate them according to the variation of their composition, structure of roots, etc.

The soil is also physically employed by certain crops, particularly those which need to be dug up; for this reason land just broken up should be planted with a root crop, because this crop will leave the soil in a good condition to be followed by a grain crop. Some go so far as to say that wheat will succeed much better after a crop of potatoes than after the land is allowed to go to rest. Attention must be given not to manure the land in excess, because the crop being only able to take part of it, there will

be a waste of money. Experience has shown that grain crops take generally phosphoric acid in greater quantity than any other manurial constituent; root plants take potassa in excess; and foliaceous plants a great amount of nitrogen.

When land is cheap and has become exhausted, the best way is to transform it into a forest of trees adapted to the soil and locality; good profit may be obtained by such practice. If a farmer furnishes every year to the soil in fertilizer the plant food taken away in crops, his land will become improved, for as has already been stated, the soil draws from the atmosphere a considerable supply of plant food.

In a few words,— manure should be applied to restore such constituents as have been taken away in previous crops, and with the view of obtaining a maximum yield, and then a rational crop rotation, to utilize all the plant food that is available, is to be followed. With forethought, a farmer can thus improve his property and at the same time fill his barns to overflowing.

COLLEGE SPORTS AT M. A. C.

The need to the student of physical exercise at all seasons is self-evident, and the endeavor to prove the axiom would be on par with demonstrating that one and one make two. Their good features in the improvement of student health, the promotion of a spirit of friendly intercollegiate rivalry, and the prominence given the institution before the public, greater than otherwise be obtained, all these proclaim its necessity.

In a small college like our own, if we wish to engage in any intercollegiate contests with any show of success, concentration of effort is needed. An institution with less than a hundred students cannot thoroughly support many different sports. Better complete success in one than doubtful success in a dozen. Of late years, interest in gymnasium practice has died out, largely due no doubt to the miserable condition of the apparatus, but foot-ball has ben well supported and the record of the past two years is a good one. But base-ball has not of late succeeded so well. It is plain that while there is plenty of material for a good team in the former sport in college, base ballists are conspicuous for their absence. A few good players do not make a nine, nor can they do the work of nine. Until the advent of superior players of the national game, base-ball and gymnasium practice should be, as it were, auxiliaries—stepping stones—to foot-ball. By concentrating our athletic energies on the one sport which of late has proved successful, we may win a higher place.

Look, for example, at Tufts, a college not larger than our own. Continued concentration of their sports to the end of strengthening their foot-ball team has rendered it a formidable opponent in this sport of the largest institutions in the land. The college is unfortunate in losing a large part of the old team, but it is to be hoped that from the latent force in college and with new comers in '86, the old strength may be renewed. As an instance of our former success in another line, we have but to look back to Ingleside, and in the memory of that victory feel cheered.

Realizing the benefit accruing from the pursuance of foot-ball at M. A. C., there are but few who ought to plead inability to lend a helping hand, either financially or by giving practice to the team. It will be a mental as well as physical gain to the participant, for although the profundity of his erudition may not equal that of the "dig," it will be the strong and healthy educated man and not the book worm who will make his rank in the world. Let practice at foot-ball begin early next fall. Last year has shown our capabilities, and this year a stronger backing will follow the fortune of the Aggie team.

SHAMYL.

Oration delivered by John E. Wilder at the Boston University Commencement, June 7th, 1881.

In the south-eastern portion of Europe, extending in an unbroken chain from the Black to the Caspian sea, rise the mountains of the Caucasus,—the natural boundary of Southern Europe.

Invested with the same sublime grandeur that characterizes the Alps of Switzeland, but heightened by the luxuriance of an almost tropical vegetation, these mountains from time immemorial have been the home of a people whose inextinguishable love of liberty has made them the last in Europe to succumb to the influences of civilization.

Tradition, and history too have, crowned each peak with a living interest that time cannot diminish. Prometheus, chained to his rocky crag, still expiates his crime in never ending torture. The, Ark with all the possibilities of the human race, seems still to ground upon the towering summit of Mount Elbrus; while through the Iron Gates, the eager watcher catches the breaking of the dawn, and looks for the coming of the hero who shall free his country from the hand of the enslaver.

It was here, Alexander met with the first check in his attempt to subjugate the world. It was here, that Attila, Zenghis Khan, and Tamerlane, swept with their victorious hosts. It was here, that the Persian and the Turk, in turn, have been smitten down in the narrow defiles of these mountain ramparts of freedom. And it is here, that Russia, in her progress toward the Orient, has wasted her best blood. It has been the unequal contest of millions against mere thousands; of an organized government against tribes owing allegiance to no ruler, among whom individual rights were supreme, and the government the simplest democracy.

It was through the untiring efforts of one man alone, Shamyl, their prophet, warrior, and king, that the Circassians made their final stand, and for over a quarter of a century, defied all Russian strategy and power. Journeying from village to village, and pouring forth his fiery words, he fans into a blaze the smouldering sparks of freedom, until, aroused by his teachings, his countrymen throw themselves headlong into his service, with a devotion that knows no parallel, with an obedience that knows no flattering, even though it leads to death.

Collecting his forces, he opens a campaign against the foe, but unsuccessful in his first efforts, he is forced to seek shelter in the rocky stronghold of Akhulgo. There, in that lonely fortress, with but a handful of followers, he held at bay for weeks the entire force of the Russian empire. With fortifications crumbling beneath the incessant fire of the besiegers,—with numbers daily lessening by famine and death, the little band still held out. But at length the fortress is carried by storm, and as the infuriated Russians sweep over the intrenchments, every one of its brave defenders is put to the sword in order that Shamyl may not escape. He is believed to be dead by both friend and foe, but miraculously escaping by the self devotion of his body guard, he suddenly reappears, and preaches more vigorously than ever the holy war against the Muscovite.

Taught by bitter experience, he no longer attempts to face the advancing columns of the enemy, but harasses their flanks with a ceaseless fusilade; and when the invaders no longer supecting danger from the peaceful hillsides, grow careless and relax their vigilance,

> "Instant through copse and heath, arose
> Bonnets and spears, and bended bows,
> On right, on left, above, below,
> Sprung up at once the lurking foe."

Officers and men go down in one indiscriminate slaughter, and the Russian detachments, like the Roman legions cut off in the German forests, are left without a burial. Russia, for a time, abandons these futile expeditions, and seeks by increasing her lines of fortifications and by negotiations to reduce the proud Iman to subjection, but all in vain. For Shamyl now moulds out of his disunited tribes a government founded upon the rock of relgious fanaticism, with himself as supreme ruler, both spiritual and temporal. He is acknowledged as the second prophet of Allah, and when returning from his fastings, in some lonely cave, a murid from the minarets of a temple sounds the call to prayers, his followers thronging thither, listen with awe to his inspired words; and at the close, on bended knee, with half drawn sword, once more renew their oath of fealty and of eternal hatred to the Muscovite.

Cool, calculating, and proud, Shamyl's enmity was one which no defeats, no losses or privations could diminish; which no offers, however splendid, could lull to sleep. And it was only when Russia renewed her attacks with redoubled energy, after the war of the Crimea, that chased from one strong fortress to another. he looked his farewell at hope, from the heights of Gownib, and surrendered to save the lives of the few devoted followers whom disaster and misfortune had left still true to his cause. He is now brought under the pale of civilization, but as the eagle, removed from the crags and peaks of his rocky eyry a captive, pines and dies, so too Shamyl, transplanted from the freedom and simplicity of his mountain home to the glitter and confinement of the court, fretted under the galling yoke, and eleven years ago laid down the weary burden of his life.

"His love of liberty, too warm, too strong,
For Hope or Fear to chain or chill.
His hate of tyranny and wrong,
Burn in the breasts he kindled still."

With him passes out of existence the nationality of the Circassians. A race whose devotion to freedom, whose indomitable courage and love of country, stand unrivalled in the annals of the world.

LOCALS.

"How tall are you?"

Query:—Is "Priney" practising for next year's choir?"

"A trap to catch a sunbeam" A luminous match safe.

Business is rushing on the farm and at the plant-pouse.

Eighty-Two:—"When shall we three (times ten) meet again?"

Eighty-two's invitations are a source of great tribulation.

The old drill hall will probally be used as an agricultural museum.

Commencement speakers are training under Dr. Edward Hitchcock.

Base-ball has been a little more lively than in the past two years.

If Vennor is responsible for the late spring, let him die the death.

Competition for Sophomore medals does not promise to be very sharp.

The favorite flower of the omnipresent potato-bug is said to be the tuber rows.

A shaky drill hall and a soft winter term in military are things in the past.

A Senior vacation of ten days has been observed by the exodus of a few of '82.

The change of Commencement drill to Tuesday afternoon gives general satisfaction.

Mr. Williams of the Senior class intends to spend the coming year in European travel.

Providence is '82's choice for class supper. It will be held on Friday night, June 23d.

The festive June bug buzzeth with his usual avidity, although late in putting in his appearance.

The lateness of the strawberry crop will cheat '83 out of the usual festive wind-up of class-work.

A band of Italian troubadours furnished the music for a "stag dance" in chapel a little while ago.

Wouldn't it be a good idea to put the college organ in good repair before the opening of the next term?

It is rumored that the telegraph poles set out by the half-breeds of '81 and '82 are to be replaced with trees.

Where has the Rifle Association been this year? Is it going to follow the rest of college sports into oblivion?

The discussion of Jumbo and his exploits have formed an interesting topic of conversation for the past month.

Commencement exercises this year are in the morning at ten o'clock in order to insure the presence of Gov. Long.

The cultivation of the land west of the county road has ruined the Springfield *Republican's* "state flower garden" of last year.

The cannon have been drawn from their old positson on the slope east of Lincoln Avenue to the campus.

Eight Seniors not content with four years at the M. A. C., intend to come back and take special next year.

Three of the men who left college from '82 have found partners for life while at least one more is engaged.

Seven Brazilian students make Amherst their headquarters at present and more are expected during the summer.

The Lab. has more workers in qualitative analysis than for some time, ten not including post-graduates being thus employed.

Coming events are casting their shadows at the Botanic Museum this morning and undergoing the agony of entrance examinations.

The gilding of '82's fountain is a great addition to its beauty. A pretty photo. was taken of it early this term when covered with ice.

fiery Arabian steed as chief attractions visited college precincts and performed to the complete satisfaction of all beholders.

Eighty-two terminated its term's agricultural recitations in its characteristic manner. Prof. Clark disagreed with the majority of the class as to the value of a second review, and rather than to talk to an unappreciative audience, he concluded the exercise then and there, thus effectively securing "a little less noise."

It is a rule at South Hadley that girls who leave after the first year become candidates for minister's wives; after the second year they fall prey to unmarried missionaries. If they stay there three years they become missionaries themselves, and whoever can pass the ordeal of a four year's course and graduate is beyond redemption; she becomes an old maid.

The following is an actual occurrence of this spring. An eminent Boston divine, prominent in temperance circles, at a Sunday-School celebration was discoursing on the evils of intemperance. "Now children," said he, "what is it that some people prefer to drink to water?" "Horsford's Acid Phosphate," was the unexpected reply in a piping voice. N. B. This not an advertisement.

Last year's foot ball team made for itself a record. It was defeated in but one out of five games, and the result of that one would have been different had not the team been disabled by an injury to its best player, the captain, and the temporary rustication of another player. More games would undoubtedly have brought us greater honors but the necessary wherewithal to defray expenses to distant towns was not forthcoming, and the games that might easily have been won are still unplayed.

Apropos of June bugs, a pretty good story is told of a recent graduate M. A. C. June bugs were thick and he resolved to count his insect visitors of a half hour. Each new comer was thrown into an empty table drawer. To his wonderment he found swarms; he was beating the record and had thrown dozens into the drawer, opening only a crack to prevent the escape of previous occupants. Opening the drawer at the close of the time, a tableau of only *three* bugs and a *hole in the bottom of the drawer*

Secretary Russell of the State Board of Agriculture sent a hundred copies of the report of the current pear for distribution among the students.

The lectures on mental science by Pres. Chadbourn have been highly appreciated, and we trust will become a permanent feature of the curriculum.

The bicycling fever has subsided. Although five machines are still owned in college they are but little used and never are more than two seen together.

By the death of Henry E. V. Goessman '84, death for the first time in over five years breaks the college ranks. The battalion wore mourning for thirty days as a mark of respect.

One month from graduation half of Eighty-one's graduates were out of the State and two of them out of the country. Let us hope that Eighty-two will not scatter so rapidly.

We are pleased to announce that the dark cloud which will fall over the college in the graduation of Mr. Myrick '82 is not without its silver lining. There is another of 'em coming in '86.

A Senior who had been looking forward to seeing the "Jollities," which were booked for Amherst on June 19th, finds to his grief that Amherst, Nova Scotia is to be the favored spot. It is a chilly planet that we inhabit.

There is but one tennis set on the college grounds but that is kept busy. The game is less severe on the hands than base ball and more respectful towards the whole person than foot ball, but to play it well requires as much skill and good-nature as either.

Glad to see so many of the matriculants attend the Boston University Commencement. It is encouraging to the representative to feel that college friends are in his audience and it enables them to gain some idea of the institution whose diploma they take.

Eighty-three has followed the example of previous classes and done nobly for her size. The east side of the county road from the Plant House path to Mr. Bangs' and the west side of the road from there to the Plant House are ornamented with their class trees. Long may they wave.

Although the great and only original Jumbo did not favor our town with his presence, Herr Jones' circus with the celebrated Signor Kendalli and his

met his view. Like the typical kitten chasing its own tail, he had been catching the same bug over and over again.

PERSONAL.

'71.

R. W. Lyman has recently been appointed by Gov. Long associate justice of Hampshire County.

His lectures in rural law to the present Senior class have proved of great value.

W. D. Russell, who is chemist and part owner of the Montague Paper Mill at Turners Falls, was in town a few weeks ago on business with Dr. Goessmann.

L. A. Sparrow, who has previously been compelled to give up his position of chemist in Bowker's Brighton factory, has associated himself with Mr. Judson of the Abbatoir, in the manufacture of fertilizers.

Wm. Wheeler, it is to be presumed, is doing well at civil engineering, since he declined the chair of Mathematics last summer, having better prospects at Concord.

'72.

J. W. Clark, during the past term, has filled the chair left vacant by the resignation of President Stockbridge.

'73.

D. P. Penhallow is microscopist and chemist at the Houghton Farm, Geneva, N. Y. He associated himself with Dr. Goessmann last fall in the peach investigation, and supplemented his remarks before the Mass. Horticultural Society in March.

Charles Wellington spent a few days in Amherst early in March, and about the first of April set sail for Europe for a protracted term of chemical study in German universities.

'75.

E. B. Bragg, W. P. Brooks, and T. R. Callender have all recently been caught in the matrimonial net. Mr. Bragg married Miss Dickinson of Amherst, Mr. Brooks, Miss Eva Hall, a sister of J. N. Hall '78, and Mr. Callender, a lady of Northfield.

'76.

G. A. Parker is now at the head of Roach's, the shipbuilder's farm and contemplates pursuing a short post-graduate course next winter under Dr. Goessmann, working up in especial the dairy interest.

T. E. Smith was in town on a short visit a month ago

J. E. Williams is putting up a large building back of the American House Block, where he intends to move early in July.

'77.

Atherton Clark is in town for a few weeks. The Menlo mine, Grass Valley, Cal., of which he is Superintendent, though yet undeveloped, is very promising.

'78.

D. E. Baker was in town the last of May. He graduates at the Harvard Medical School this month.

E. C. Choate was elected Trustee of the College last winter in place of Wm. Wheeler '71 resigned.

J. N. Hall is house doctor at the Boston City Hospital and a great favorite with the nurses.

C. S. Howe was recently married to Miss Waite of North Amherst. He is now in New Mexico, winding up his business, preparatory to coming East.

H. E. Stockbridge is in Göttingen studying chemistry.

F. Tuckerman married Miss Alice Cooper of this town last fall. He graduates at the Harvard Medical this year.

'79.

S. B. Green is farm manager at Houghton Farm, Geneva, N. Y.

G. P. Smith is farming in Sunderland and agent for Bowker in the Valley.

W. A. Sherman and R. W. Swan become M. D.'s this month, at Long Island and Harvard respectively.

'80

Is largely in the land of the setting sun. A. L. Fowler, F. E. Gladwin, and C. M. M'Queen, in Arizona, and W. G. Lee in California, are all interested in mining.

'81.

C. E. Boynton, when last heard from, was in Kentucky, a traveling book agent.

"Boonzo" is married, and presumedly heading the race for the class cup.

A. Peters is at the New York Vet. College, with one year more of study before him. He ultimately intends to engage in farming.

E. B. Rawson has been assistant engineer on the on the N. Y. L. E. & W. R. R., and engaged in the construction of the Kinzua viaduct, which when completed will be the highest railroad bridge in the world.

H. F. M. Smith is working at the plant-house, and intends to study medicine next fall.

C. D. Warner intends to go to Germany soon to study language.

H. H. Willcox is at Nawiliwili, Sandwich Islands, on his brother's sugar plantation, among other things overseeing a gang of his especial pet,—the Chinese.

THE CYCLE.

Supplement.

Containing an account of the Exercises of Commencement Week,
List of Prizes, Etc.

COMMENCEMENT EXERCISES.

Lowering skies and frequent showers were the somewhat unauspicious opening of '82's Commencement week. Sunday and Monday were typical April days, but Tuesday with its clear sky and cool wind was all that could be wished.

SUNDAY.

Notwithstanding the rain a goodly number assembled in the chapel on Sunday morning to listen to the baccalaureate sermon by President Chadbourne. The *esprit de corps* of the students was abundantly manifested by the handsome decoration of the chapel with flags, plants, and military accoutrements. The President took as his text, Job 28 : 12—"But where shall wisdom be found? And where is the place of understanding. No matter what the dangers or privations that beset the way, money will ever find multitudes to try their chances in the glittering lottery of riches and death. This acquirement of wealth is what some consider wisdom; others will say that it is not in this line that the true wisdom is to be found. The laws of trade, to the merchant, of national government, to the statesman, and the wonders of the universe and of man's physical being, to the scientist, seem the true wisdom for which man should seek. But the Christian will say, all these are wisdom, but that which the text calls for is love for God and a departure from evil, the use of the highest powers with best effect to secure the highest ends of human life, which makes learning of use to both possessor and mankind. The address to the graduating class was eminently appropriate and full of sound advice. The Springfield *Republican* has published the latter verbatim; it may well be preserved by every member of '82.

In the afternoon, the Rev. Dr. Riddle of Hartford Theological Seminary gave an address before the College Christian Union on "Faithfulness to Jesus Christ, the true principle of Christian living. He dwelt forcibly on the idea that the great danger of the day was the influence of the snob element, the culture, which, not satisfied with the simple words of Jesus in their natural meaning, must needs interpret them, warping and twisting them to meet their especial aims. Faithfulness to Christ and his teachings, a faithfulness uninfluenced by the dilettanteism of the day, or the plausible rendering by so-called philosophers, will earn eternal success, which it were heaven to attain, and unfaithfulness eternal failure. Thoroughly in earnest, Dr. Riddle interested his audience to the last of his long discourse.

MONDAY.

On Saturday the bulletin board of the military department announced a 6 o'clock morning drill on Monday morning. Many were the growls at being aroused at such an early hour, and queries as to the propriety of drilling in a ground of semi-fluid nature. But the drill came off, and the afternoon's rain showed it to have been timely. The morning was taken up by examinations, the afternoon by receiving friends and a rain storm. In the evening the Farnsworth Prize Speaking exercises were held the college chapel, which was completely filled by an appreciative audience. The speakers were :—

Frshmen.—P. C. P. Brooks, "Address of Antony at Caesar's Grave;" W. M. March, "Virginius to the Roman Army;" C. P. Spaulding, "Toussaint L'Ouverture;" C. S. Phelps, "Destruction of Pompeii;" E. W. Allen, "Eulogy on Lafayette;"

Sophomores.—W. P. Mayo, "Never Despair;" R. C. Day, "Washington at Princeton;" E. A. Jones, "Ancient Rome and Modern Civilzation."

The music was furnished by the Northampton The judges were Dr. Edward Hitchcock, Jr., Atherton Clark '77, and E. B. Rawson '81..

Commencement Monday evenings have long been chosen by the fraternities for reunions. After the prize speaking, the D. G. K. fraternity held its convention at the Aleph Chapter House. After the secret session, the members repaired to Mr. Muzzey's for the annual banquet, which was got up in Mr. M.'s best style that it proved more than satisfactory as twenty odd can testify. Toasts, songs, and fun were the rule, and it was not until the wee sma' hours had grown a wee bit bigger that the merry company separated.

The Q. T. V. fraternity held its annual banquet at the Amherst House on the Saturday night previous to Commencement week, and as has always been the case the occasion was most enjoyable to all concerned. Landlord Conkey's menu was of the best and was thoroughly appreciated.

The same hall reëchoed on Monday evening to the songs of the Phi Sigma Kappa fraternity. Having discussed the bounties of the well filled tables, toasts and songs followed, and jokes flew fast. It is needless to say that it was a pleasant occasion.

TUESDAY.

The examination of candidates for admission to college was held at the Botanic Museum at 9 o'clock A. M., and a goodly number is promised for '86. At

10 o'clock the Senior agricultural examination for the Grinnell prizes began in the chapel. Mr. Sessions of Hampton, Dr. Lynde of Athol, Mr. Slade of Somerset, Mr. Moore and Mr. Damon were the judges, and questioned the class on the following topics :—

1. Why is scientific knowledge necessary to successful agriculture, and what sciences have special reference to it?

2. Agriculture as a producing industry, and its relations to the other arts and industries.

3. Origin and composition of soils.

4. Kinds of soils, their characteristics and adaptations.

5. Influence of organic and inorganic matter in the soil.

6. The influence and office of air in agriculture.

7. Effects of drainage, and different methods.

8. Structure of plants; their organs and offices.

9. Changes produced in our agricultural plants by cultivation.

10. Sources from which plants obtain their food, and the manner in which they take it.

11. Plant growth.

12. How is the soil affected by the natural growth and decay of plants upon it, and how by the artificial production of plants, and the removal of crops.

13. Exhaustion of the soil, general and special.

14. Rotation of crops.

15. Influence of tillage and pulverization of the soil on both soil and crops.

16. Ploughing in green crops.

17. Commercial fertilizers.

18. Different methods of applying manures.

19. Farm economy.

20. General and special farming.

21. Market gardening.

22. Fruit culture on the farm.

23. Forests, their influence and management.

24. Management of a grass farm and soil best adapted to it.

25. Different breeds of cattle.

26. Original type of our neat stock and changes produced by domestication.

27. Does farming pay?

The Trustees of the College and the State Board of Agriculture held special meetings at the President's office and elected their respective representative on the experimental station board of control.

The change of Commencement drills from Wednesday morning to Tuesday afternoon is a commendable feature. Manual of arms, sabre exercise, bayonet drill, skirmish drill, artillery and mortar drill, followed in quick succession, and at 3 o'clock the whole battalion in dress uniform marched to the chapel to listen to the reading of the prize military essays, by Cadets W. E. Stone and W. A. Morse. At 4 o'clock, battalion drill and review, this completed the military exercises of the day. His Excellency Gov. Long, then made an address which was followed by a stirring speech by Dr. Geo. B. Loring, U. S. Commission of Agriculture. The fine weather added in no small degree to the comfort of the cadets and of the large crowd of assembled friends. In the evening President Chadbourne held an enjoyable reception at the Amherst House. Members of the Governor's staff and council and many of the trustees and State Board of Agriculture were present. The president and his estimable lady made the occasion a pleasant one to all, and the hour for departure arrived all too soon.

The class of '76 held a re-union at the Amherst House and had a glorious good time. As a class it was always noted for its goodfellowship and it is evident it has not lost its old spirit.

WEDNESDAY.

The alumni meeting was held at half-past 8 in the morning, being fairly well attended. Not much business of importance was transacted save the acceptance of the treasurer's report and the election of the officers for the ensuing year.

At 10 o'clock the graduation exercises were held in Amherst College Hall. The speakers of Wednesday were :—

Herbert Myrick, "The Press in Agriculture;" J. L. Windsor, "Liberty and Law;" W. E. Stone, "The loss of the Jeannette;" W. H. Thurston, "Agriculture, Yesterday and To-day;" David Goodale, "New England Thought;" S. C. Damon, "Man in Nature;" J. E. Wilder, "Shamyl;" L. R. Taft, "Historical Doubts," with valedictory addresses.

Eight of the '81 men have returned to commencement exercises. At the close of the speaking President Chadbourne presented the college and military diplomas, and afterward in behalf of Pres. Warren, who is in Europe, presidented the diplomas of the Boston University to its matriculants, and with music '82's commencement passed away.

PRIZES.

Farnsworth Gold Medals.—E. A. Jones '84, P. C. P. Brooks '85. *Farnsworth Silver Medals.*—W. P. Mayo '84, C. P. Spaulding '85. *Hills' Botanica Prizes.*—Undecided at time of going to press. *Military Prizes*, awarded for best essays on "The Military Problem of the United States."—1st, W. E. Stone, $25; 2d, W. A. Morse, $15. *Grinnell Agricultural Prizes.*—1st, W. E. Stone. 2nd—Undecided.

THE CYCLE.

VOL. V. TUESDAY, JUNE 19, 1883. NO. 1.

PUBLISHED BY THE ALEPH CHAPTER OF THE Δ. Φ. Σ. FRATERNITY, MASS. AGRICULTURAL COLLEGE.

ORDER OF EXERCISES.

For the Thirteenth Graduation Anniversary, June 18, 19 and 20, 1883.

MONDAY, June 18.—Farnsworth Prize Declamations, in Drill Hall, at 8 P. M.

TUESDAY, June 19.—Examination of Candidates for Admission to College, in the Botanic Museum, commencing at 9 A. M.

Public Examinations of the Graduating Class in Agriculture, for the Grinnell Prizes, in the Laboratory Lecture Room, at 10 A. M.

Exhibition Drill of Junior Classes, at 2 P. M.

Reading of the Prize Military Theses, in the Drill Hall, at 3.30 P. M. Conferring of Military Diplomas, by Hon. Wm. H. Haile.

Address before the Alumni, by Hon. George B. Loring, in the Drill Hall, at 8 P. M.

WEDNESDAY, June 20.—Alumni Meeting, in the Laboratory Lecture Room, at 8.30 A. M.

Graduating Exercises, in Drill Hall, at 11 A. M. Conferring of Boston University Diplomas, by Pres. William F. Warren. Address and Conferring of College Diplomas, by his Excellency, Benjamin F. Butler.

EDITORIAL.

The CYCLE has become such an established thing, such a regular event of commencement week, that there hardly seems to be a call for any opening editorial to usher in its fifth number; but since so many new faces greet us at every commencement, it is in a measure due them that some slight exposition of our standpoint should be made. Our platform is plain and concise: to further college aims and objects, to chronicle commencement events, to represent the under-graduate world; and we emphatically reiterate, pointing to our past record for confirmation of our statement, that although issued under the auspices of a secret fraternity, the CYCLE is a college paper, sent forth, not in the interests of the few but the many, whose cordial support in former years has voiced their appreciation of our motives.

It will be noticed that our issue of to-day contains four pages more than those of previous years. The supplement, too, will be issued as usual at the close of commencement exercises.

The CYCLES of preceding years have each contained some rather extended article, often formidable on account of its length, though in point of fact, readable. In this issue we have departed from this custom and offered such a diversity of shorter articles as will appear less tiresome to the eye and be perhaps more easily read.

Our patent poetry machine was on a strike last year,—the crank wouldn't work and we were unable to grind out any poems to illumine our pages. This year we are happy to state that the product is more plentiful.

In a somewhat paradoxical manner, this opening editorial is the last thing written before going to press. We have had a pleasant task in editing this issue. Our faults are doubtless plain and we regret them; our merits many but we are too modest to enumerate them.

Pray excuse the one, may you appreciate the other.

To the students we wish a pleasant vacation, to our visiting friends, a profitable season, and to all "Auf Wiedersehen."

During the past year the college has suffered a loss perhaps the severest which can befall such an institution, the removal of its president by the hand of Death.

In our issue of a year ago we hailed his coming with joy and presaged the revival of our drooping interests; and now, after a year's active work in our behalf, we are called on to mourn his loss. How vividly do we recall that dark February afternoon when, with sorrowful faces and saddened hearts, we were told that our President was dying. Many of us seemed almost ready to doubt God's goodness.

But, on the other hand, however much we mourned what might have been, we could not but recognize that, during his short stay with us, we had received an impetus from his revivifying spirit and, in a measure comforted by the thought, the words, "Thy will be done," came more easily from our lips.

Would that our pen were able fitly to portray his worth! The nobility of his character, his hatred of pretense and appreciation of truth, his devout Christian spirit, the diversity of his genius, successful in spite of its diversity, are themes which we would gladly enlarge upon were we able to express our feelings or do them adequate justice.

His character is deeply enshrined in every one of our hearts and words but poorly express its teachings. The recent issue of an obituary sketch of President Chadbourne by Prof. Bassett, who has been closely connected with him for many years, and which has doubtless been read and appreciated by us all, renders any extended notice in this publication less needful.

No better motto can be afforded those who have listened to his teachings than that which plainly governed his life, "He had planned and worked as if he might live forever, but had so lived as to be ready to die at any moment".

As is usual at Commencement time, the college is honored by the presence of His Excellency, the Governor, and it is with peculiar pleasure that we welcome to our grounds to-day the present incumbent of the gubernatorial chair.

Whatever may be the sentiments which those directly interested in our institution hold, regarding the particular political views and methods of His Excellency, the Commander-in-Chief of our Army and Navy, whatever be their idea of his qualifications for his present position, it seems to us that our grateful recognition is due him for the marked favor which he has shown the institution and the material aid which he has afforded it. Unlike some of his predecessors, either ignoring or actually antagonizing the institution, he has been outspoken in its defense and shown a decided interest in its welfare, his influence has been thrown in the support of the free scholarship bill, and his special message on the occasion of the transmission of President Chadbourne's report to the legislature was an able document and a sound argument.

Gov. Butler's enemies have not been backward in implying that his favor towards the college and the farming community is not actuated as much by respect for the farmer as with an eye to the more material matter of votes, in short, that he loved not the college the less, but votes the more. However this may be, it is bad policy to examine a gift-horse's teeth; the benefit we receive is not lessened by any secondary, or even primary object, which may have been held in view, and in behalf of students, alumni and friends, for your evident interest in us, Gov. Butler, we thank you.

Until within late years opportunity has not been wanting to criticize the financial management of the College. A lavish expenditure was displayed during the first years of the collegiate existence, which naturally excited adverse criticism, particularly in legislative halls. Of late, however, the authorities of the institution have, of necessity perhaps, flown to the other extreme and been almost too careful of expenditure. In general, we do not criticize this policy as it was largely compelled by circumstances, but there is one instance of the penny-wise, pound-foolish method which has been so strikingly brought before our notice during the past year, that we cannot refrain from mentioning it. In order to gain a small fraction of a per cent. in an insurance policy on the plants in the plant house, a proviso was inserted that not over twenty-

five dollars per plant should be paid in event of their destruction, even though their value might be much higher. As a result of this policy nearly eight hundred dollars were lost in the value of plants destoyed in the fire of last January. For the magnificent fan palm, valued at two hundred and fifty dollars, but a tenth of its value was paid in insurance.

When we consider the difficulty which will be encountered in the replacement of many of the specimens without the employment of ample means, the shortsightedness of this policy becomes evident. If any of the collections in the other departments are thus half protected, we hope that the trustees will take warning from last winter's disaster and shut the rest of the barn doors before the other horses are stolen.

The most sensible bill in the interests of the College which has been before the legislature for many years has been passed by the general court and become a law. As is known to many to whom this page appears, it provides that $10,000 be for four years paid into the College treasury for the purpose of providing free scholarships to be distributed according to senatorial districts, applicants, if in numbers warranting, to be subjected to competitive examination. The number of students is a good index of the condition of an institution, and we hope, and on better grounds than ever before, to see a marked increase in the size of incoming classes.

The generous gift of the Essex Agricultural society, the $100 prize for the applicant who passes the best entrance examination, will prove an added incentive to new comers. The annual allowance from the state treasury will be a direct income and will enable the re-establishment of the chairs of natural history and veterinary science, for several years left vacant, a consummation devoutly to be wished. After this we hope so many changes in the faculty will not be necessitated.

The students are generally familiar with the progress made in the experiment station during the past year and it has become such a prominent feature of the institution that it will not be out of place to invite the attention of our visiting friends to its striking features. During the past spring a complete renovation of the old farm buildings at the north end of the college farm has taken place and they are now occupied by the station.

The barn is fitted up with stalls and pens in the most approved style and so built that each animal can be isolated and completely studied in all its relations. Scales have been put in for weighing the fodder and hay lofts partitioned off for various crops. The house has been made inhabitable and will be used for offices and rooms.

Drainage plots have been laid out in the piece lying between Prof. Miles' house and the station buildings, different fertilizers being applied and their effect being tested as regards their comparative rapidity of leaching. The drainage waters are now being tested in the laboratory.

Land is also in use for experimental purposes in the grounds of the botanical department.

The chemical work is being done in the college laboratory where temporary accommodation has been obtained.

Although hampered by the small amount appropriated, Dr. Goessmann is making an admirable director. The work has been laid out more on the plan of the German stations than has been the case with any other in this country, there being a broad basis for experiments to cover several years. There will be none of the "quick-step, hurrah-boys scientific agriculture, which demands that there must be something to show by a week from Saturday, that will make a rattle in the newspapers"; there will be no "monthly display of sky-rockets"; but steady, careful, systematical and protracted research, which will bear on its face the stamp of its authority.

We have great hopes for the future of the station and look for much good to follow its establishment

We have now experienced the working of the "new curriculum" for a year and are enabled to form some idea of its efficacy and can judge whether or no it "fills the bill". In the last issue of the CYCLE, the need of change in the course of study was advocated and the new year brought

essentially the revision there mapped out. A better sequence in the course in science, the optional course in French and German and the placing of the agricultural instruction mainly in the work of the first two terms, rendering absence during the third term possible, are the main alterations.

A number on account of limited means, or of call in other directions, have availed themselves of this second course, and will receive the degree of Bachelor of Ag'l Science on graduation. It is to be regretted that so few have availed themselves of the French optional during the past year, and the gradual "tailing off" of these few has shown a lamentable lack of interest. We hope to see a larger number availing themselves of the "Dutch" optional next year.

The new curriculum breaks up the unity of the classes, but that desideratum in comparison with the opportunity offered for selection of study, is thrown into the background. Thus far it has proved successful and the wisdom of its adoption is becoming evident.

THE FAUST LEGEND.

The subject is an old one, a German legend of a great scholar who, out of disgust at knowledge and impatient of pleasure, made a compact with the Devil, lived a wild life, and was finally carried off alive to hell.

There is certain evidence that in the early part of the sixteenth century there did actually live in Leipzig, a scholar and graduate of Wittenberg, who seriously believed in and cultivated the "black art" and assiduously cultivated the acquaintance of the Devil. There is in Leipzig a place called Auerbach's Cellar, where, it is said, Mephistopheles, or the Devil, bored the table with a gimlet, and then flew out of the window with Faust astride a wine cask.

The main room is adorned with very old and faded frescoes, representing the various aspects of the legend, several of which it is claimed existed there before Goethe wrote his version of it, and indeed suggested to him the idea of Faust. The oldest and quaintest of them—probably about 350 years old—representing Faust disappearing before the amazed revelers. In the center of the room where the feat of the gimlet is said to have been performed, there is a huge cask, and on the walls around are the admirable pictures by Kaulbach, representing scenes from Goethe's Faust, which alone are fine enough to repay a visit to Leipzig. That artist has done nothing better than the form and face of Margaret. But that which is especially interesting is an old book, a history of Leipzig which the proprietor of the cellar had purchased at a large price, because it contains the portrait of Dr. Faustus and some brief historical mention of him. The book is kept chained to a table, where visitors are permitted, under many cautions as to its value, to peruse it. It is entitled "Annales Lipsiensis," bears no date, though evidently printed near the clo e of the last century. Its notice of Faust is very brief, merely stating that in 1525, Dr. Johan Faust lived in Leipzig and devoted himself to the study and practice of astrology and magic. The portrait is from a copperplate and represents a man in the scholastic dress of the period, with a strong, round German head and face, jutting brow, wide between the eyes, which are prominent, and a thin cynical mouth under small pointed mustaches. The figure is slightly bent, and would seem, as also the thin, curling gray hair, to belong to a man of about seventy years old. The general aspect is grave and scholarly.

There is also in the cellar an old book which belonged, or so it is alleged, to this famous doctor. One might well believe, too, that it might have been once in his library, because of its resemblance to a book in the royal library of Dresden, written by Michael Scotus, which there is good reason to believe was owned by Faust. Both of these books of magic are written in Latin, interspersed with Arabic characters and sentences. There are complete directions for raising any particular devil desired. In another part of the work is found a seal in red letters on a black ground, presumably the seal affixed to the bond, signed in blood, between Faust and the Devil. The book also contains a picture of Mephistopheles, who instead of being the Voltairean caricature represented in post-Goethean pictures of him, is here, with all the slyness in his eyes, a hearty, thick-built fellow, suggestive of the form

of the stupid devil of later German mythology. A reeent writer thus deseribes a night in Leipzig,—I wandered about the city under the moonlight and found reason to believe that the power of the gentleman in black had not altogether passed away with his old friend, Faust. Most German cities are fast asleep soon after nine o'clock, but there was hardly a street in this one where long after midnight, groups of students were not raising the devil in a much more ordinary way than by the black art. What a place to train that young Goethe of Frankfort, that prince of Bohemians, who here in 1765 passed merely for a dandy and a fast youth with his fellow students and his sweethearts who little knew into what they and their cellars and orgies were being subtly transmuted by the genius of this young alchemist. In the old fresco in Auerbach' s cellar there is a small dog near Faust as he disappears on the cask, there being no appearance of Mephistopheles at all. But it is still more curious of the re-appearance of that dog in Goethe's Faust, that being the shape in which Mephistopheles first appears. The reader will remember it was when Faust was walking with the student Wagner that the black dog appeared rushing around them in a spiral curve spreading as Faust said "a magic coil as a snare around them," that after this dog had followed Faust into his study, it assumed a huge, monstrous shape, until under a spell it changes to a mist from which Mephistopheles steps forth, the "kernel of the brute" in guise of a traveling scholar. This passage in Faust has been traced by some critics to Goethe's antipathy to dogs—an antipathy which he himself associated with the curious speculation known as the theory of monads. The statement referred to is that made in his conversation with Falk, at the time of Wieland's death, which Mrs Austin has translated in the first volume of her "Characteristics of Goethe." I assume says Goethe "various classes and orders of the primary elements of all existences as the germs of all phenomena in nature, these I would call souls, since from them proceed the animation or vivification of the world, or rather monads, let us always stick to that Leiburzian term, a better can scarcely be found to express the simplicity of the simplest existence; now as experience shows us, some of these monads or germs are so small, so insignificant, that they are, at the highest, adapted only to subordinate use and being. Others again are strong and powerful; these latter, accordingly draw into their sphere all that approaches them and transmute into something belonging to themselves; i. e. into a human body, an animal, a plant or, to go still higher, a star. This process they continue till the small or larger world, where completion lies completed in them, at length comes bodily into light; such alone ought ever, I think, properly to be called souls, you may call the germ a monad or an idea, as you please, I have no objection, enough that it is invisible and antecedent to the visible external development. We must not be misled by the larvae or imperfect forms of the intermediate states which this idea or germ may assume in its transitions. One and the same metamorphosis, or capacity of transformation in nature, produces a rose or a leaf, a caterpillar out of an egg and again a butterfly of a caterpillar. Annihilation is utterly out of the question, but the possibility of being caught on the way by some more powerful and yet baser monad, and suodued by it, this is unquestionably a very serious consideration, and I for my part have never been able to entirely divest myself of the fear of it, in the way of a mere observation of nature' 'At this moment," says Falk, "a dog was heard repeatedly barking in the street. Goethe, who had a natural antipathy to dogs, sprang hastily to the window, and called to it; 'Take what you will, vile larvae, you shall not subjugate me'. After some pause he resumed with the remark, 'This rabble of creation is extremely offensive, it is a perfect pack of monads with which we are thrown together on this planetary nook, their company will do us little honor with the inhabitants of other planets if they happen to hear anything about them'." It is doubtful if Falk is right in describing Goethe as having a natural antipathy to dogs, the probability seems to be rather that when he was steeping his brain in the legends and superstitions of the region in which he lived, he encountered this one about the dog, and to a certain extent adopted it in order to reproduce their spirit completely.

The wayfarer who, visiting the Brocken, turns aside but a step from the beaten path of tourists may still hear peasants tell with subdued breath of the spectre which their own father, or grandfather saw, or of the headless horseman. It would take all the money in Germany to induce a lad to visit that region on the eve of May-day when all the witches of the universe gather for their Saturnalia. The village of Reichelstein has on file the affidavits of persons who heard the Devil just before the battles of Leipzig and Waterloo. In Goethe's lively description of his infliction by the barking dogs of Gottingen, already alluded to, he also expresses his horror of the hunting horns used by the watchmen, "proving to us by the most frightful and alarming noises that they were keeping watchful guard over the tranquility of our slumbers". Taylor, speaking of this nocturnal horn, says,—"I once heard it in a most obscure little town on the borders of the Black Forest. After his blast, the watchman recited four lines,—a sort of invocation or blessing which was clearly a remnant of the Middle Ages." The post-Goethean Mephistopheles is one who barters morality for pleasure; but the Mephistopheles of Goethe belongs to an age of philosophy which has produced those who question morality itself.

A DRUMMER'S TALE.

Dear Cycle :—You ask for information concerning that brotherhood of men,—the terror of the merchant, and the admired of the uninitated—"The Drummers;" and while enumerating some of their peculiarities I would have you remember the time-worn saying that "every rule has its exceptions." Of course you will readily understand that I am an exception.

The drummer inhabits railroad trains. He is always at home in the cars. He is usually swung to a satchel containing another shirt, a comb and brush, a clean celluloid collar and a pair of cuffs, besides a railroad guide and a newspaper wrapped around a suspicious looking bottle. This is about all the personal baggage he carries except a Seaside Library novel, and a pocket knife with a cork screw in the back of it. He has a two-story, iron bound trunk containing samples, which he always checks through to the next town. He always travels for a first-class house, the largest firm in their line of business in the United States; a firm that sells more goods and sells them cheaper than any house in the country. He is very modest about stating these facts, and blushes when he makes the statement, but he makes it nevertheless, probably as a matter of duty. He can talk on any subject although he may know little or nothing about it; he gives you his views, whether upon the evils of monopolies, or the quickest cure for "colds, coughs or consumption," in an air and a tone that leaves the matter beyond dispute. He is at home everywhere and he never seems out of place wherever you find him, although very seldom seen at church. Sitting on his grip sack at a way station, waiting for a train six hours late and abusing the railroad officials from brakeman to president, he displays and exhausts his entire vocabulary of expletives, though all the time in perfect harmony with his surroundings. The scene would be as incomplete without him, as a horse race without a yellow dog on the track.

When a drummer enters a train, if alone, he occupies two seats. One he sits on, and on the other he piles up his baggage and overcoat, and tries to look as if they didn't belong to him, but to another man who has just stepped into the smoking car and wouldn't be back directly.

Drummers are usually found in pairs or quartettes on the cars. They sit together in a double seat with a valise on end between them, upon which they play euchre and other sinful games. When tired of playing, they go into the smoking car where the man who is traveling for a distillery shows up his samples and they swap lies for an hour about the big bills of goods they sold in the last town they were in.

There is only one point on which the drummer is at all inclined from the truth and that is on the question of baggage; here he will sometimes stretch a point to make it cover two hundred pounds of a three hundred pound trunk. He is the only man who dares address hotel clerks by their first name; he knows every hotel in the coun-

try and always gets the best room. In the dining room the drummer is a favorite with the colored waiters although he orders more dishes and finds more fault with the fare, than other guests do. He does not believe the waiter when told the milk is all out but sends him to inquire further about it, and while the waiter is gone fills his glass with the blue milk from the cream pitcher. He goes to bed at a late hour, and sleeps so soundly that the porter wakes the whole house and shakes down the plastering in trying to communicate to him the fact that the bus for the 4.00 A. M. train leaves in ten minutes.

The drummer has much to weary and fret him. Traveling at night to save time, sleeping in a baggage car, or the caboose of a freight train, with nothing but his ear for a pillow, bumping over rough roads, eating corn bread and coffee dinners at cross-roads hotels, yet amid all these discomforts he is usually good humored and in the best of spirits.

All kinds of stories are told of drummers; the following is a good sample :—"The story is told of a drummer who was seen camping under an umbrella on a sand hill in Kansas; when asked what he was up to, he replied, 'Bringing down the average'." It seems the firm allowed him a certain amount for expenses and he had far exceeded it in riotous living, while by camping out a few days and living on his own cheek he could once more start square. This story is probably a little stretched.

The chief end and aim of the drummer is to sell goods, tell anecdotes, and circulate the latest slang phrase. If he understands his business the country merchant might as well capitulate at once. There is no hope too forlorn, nor merchant too surly and taciturn for the drummer to tackle. The drummer is the natural outgrowth of this fast age, and without him the car of commerce would creak slowly along.

THE EARLY DRAMA.

The love of all people for amusement was what lead to the early development of the drama. Its progress at first was very gradual, the plays being hardly worthy to be called dramas, but in the time of Elizabeth they had become a very prominent feature of the amusement of the people.

Its origin was undoubtedly in the songs which were sung at the festivals of Bacchus by the ancient Greeks, but which were little like the drama of to-day. The next style is to be found in the Mystery or Miracle play, the characters of which were taken by priests, when first introduced, but they soon gave way to the citizens, and finally it was forbidden the priests to take part in these productions. Originally, the Mysteries were given in the churches or church yards, though certain ones known as pageants were afterward produced in the streets. Portions of the Miracle plays were necessarily uninteresting, and to enliven them they were obliged to introduce some humorous part which was usually taken by the Devil and which gave rise to the modern clown.

From the Miracle plays, passing through the Moralities and Interludes we come to the Elizabethan drama which is essentially the same as that of to-day.

The city of London in Shakspeare's time being strongly Puritan, made it almost impossible to open a theater inside the city limits, but the sentiment of the people at large called for amusement, and to gratify this taste several theaters were built just outside the city, and the attendance was so large that on Sunday when they were open, the churches were left empty.

At that time an actor was dependent on his own merit for his success, for their stage was not provided with the modern conveniences and attractions which serve to draw the attention of the audience from any imperfection in the acting. The theaters themselves were very large and with few conveniences. In most of them the only portion protected from the weather was the stage and no seats were provided for the larger part of the audience. The locality of the scene was announced by a placard. If a tragedy was to be enacted, the stage was draped with black. Among the properties of some of those old theaters was to be found a "roobe for to go invisibell" which was probably used by Hamlet's Ghost and other like characters. Previous to the play it was the

custom to give a prologue in rhyme, while at the end the actors all knelt and offered up a prayer for the sovereign. The former practice became so firmly fixed that when the endeavor was made to do away with it, the audience would not allow the play to go on till it had been given.

In the early history of the drama the female parts in the plays were taken by boys (to which Shakspeare refers, when the Egyptian queen says, "I shall see some squeaking Cleopatra boy my greatness,") and it was not till the beginning of the seventeenth century that women first appeared in the drama, when a French company visited England, and they were hissed off the stage.

It is very remarkable that Shakspeare could have created such true types of women, knowing as he did that the parts were to be taken by boys.

Shakspeare's success in his own time was undoubtedly owing to the efforts of Richard Burbage, who produced his play on the stage and which probably incited Shakspeare to new vigor.

Shakspeare, himself, acted prominent parts in his own plays, generally choosing the older characters. Being an actor, himself, of course he was enabled to write more understandingly and the "directions to the players" which he puts into the mouth of Hamlet, shows how familiar he was with such matters.

A single generation witnesses the rise and development of the early drama. Once started, actors flocked to the cities in search of a livelihood. Together with this development of the drama, was the growth of the dramatic literature which makes up a very important part of early writings, and dramatic writers became nearly as abundant as the actors themselves.

In the middle of the seventeenth century, the glory of the English drama had almost departed. A Civil War in 1642 closed all the theaters, and from that time till the Restoration, theatrical performances were illegal. A century later, however, they were again opened, movable scenery was introduced, the female parts were personated by women and dramatic literature became the only remunerative portion of the writings of the time.

MACAULAY.

During the pleasant days of a summer vacation a friend advised us to read the "Essays" in order to cultivate our style. How astonished we were at his treasures of knowledge, variety of erudition and sagacity of discernment, and more than all,—his wealth of language. In Macaulay is shown the distinction between a man of talent and a genius. Talent may exist latent and be unknown forever if circumstances and surroundings do not draw it out. Raphael picked up a barrel cover and painted on it the divine "San Sisto". Shumann wrote the "Traumerei" on an old envelope. Dante, wandering about in exile from his beloved Florence, wrote the "Divine Comedy," while Macaulay, in the calm quiet of his library, possessing a rare memory, combined with real intellectual sympathy and comprehensive knowledge, did not originate a single idea. His was not a creative mind; although loving to wander in the twilight of the unreal, he could not give to "airy-nothing a local habitation and a name."

Although possessing a mind singularly adapted for research and generalization, for him the retorts of the laboratory had no charm, the haunts of the monad and the secrets of the insectivora were exchanged for the attics of crack-brained poets and the intrigues of courts. His sagacity of discernment, as we have said, was very great; he could compare, yet, neglecting the researches of science and phenomena of nature, he becomes ecstatic in his efforts to determine the place of scribbling rhymers on the hill of Parnassus and hastens to place a night-cap on the brow of the would-be bard to whom posterity had denied the laurel crown.

Such was the impression we derived from Macaulay's writings. Of course his pages are picturesque, yes vivid, but can a lover of Milton and the English drama speak coldly of them? It is pleasant to dream over the pages of the old poets, but we do not need a guide; one will feel more refreshed by drinking at the fountain than where it is mingled with the mud of lower streams. In history it is not necessary for the historian to give us his opinion of men and things. Man is always the same animal. The world is like a pan-

orama, showing one side to-day and if we only lived long enough we should see the same side again. Men of large views exist in all societies, so do narrow-minded men. The same passions and affections as we have, moved our primordial ancestors.

Only once in an age is a great man born who from the chaos, triviality, brings into being inspiring works. To these we should cling, consigning all others to the "dust and silence of the upper shelf."

THE PALM TREE.

To study Nature in all her splendor one must go to the tropics. There the sky is more blue and the sun and moon more bright than in other zones.

Wonderful indeed is vegetation in its luxuriance. In the woods the tall and beautiful palm raises its green plumes above all as if queen of those dense forests. From its trunk gorgeous air plants throw out their dazzling blossoms. The buzz of golden insects, the song of brilliant birds or the frightful yell of the jaguar break the silence of the almost impenetrable thickets. In cultivated grounds we see the coffee tree with its white flowers and red berries, the banana with its golden fruit, the orange with its fragrant blossoms; here are fields of snowy cotton, there groves of rubber trees. Everywhere beautiful flowers delight the eye, luscious fruit the taste.

The most useful and beautiful of all is the palm, the wonder of the tropics. We meet it on the sea coast, on high mountains and even in the deepest swamps. Their tall, slender trunks rise on every side. Some have a smoother stalk, others are covered with spines, some have leaves of one size and shape, others entirely different. The Miriti palm of the Amazon has bunches of fruit so heavy that one of them is a load for two men, one of its leaves alone is too heavy for a man to lift.

There are hundreds of varieties of palms each having its own characteristics and uses. The Fan palm surpasses all the others in beauty, but for usefulness none can exceed the Carnauba. The palm is made into brooms, canes, parasols, knobs, buttons, hats, mattings, furniture and toys.

The Betel nut, reduced to charcoal, and dragon's blood, is used for tooth powder. In fine toilet soaps, the fatty substance is largely from palms. Dates, sago, and cocoa nuts are used for food. Even the shoots of the palm are used as rattans to help the teacher in his pleasant task of imparting knowledge to his refractory pupil. The palm is indispensable to the Indian. His boat is from its wood and leaves, its fibres give him strings for his bow and cords for his hammock. From its wood he builds his house and covers it with leaves, which also furnish him with baskets. The hard shell of the fruit is made into utensils, after being carved and painted; from its stem he makes musical instruments, and from its sap wine to celebrate his festivals. From some palms he gets flour and sugar.

How could the Arab cross the desert but for the date-palm and how grateful he must feel toward it when nearly dying from hunger and thirst he finds food and shelter under its cool shade?

The Carnauba is found in the northern part of Brazil, a dry, sandy region, often suffering from severe droughts; when every other tree has died, this alone remains, supplying the wants of man and beast.

From its leaves, after being beaten, a waxy substance is extracted from which candles are made. The ribs of the leaves when cooked taste like cabbage. Very good paper is also made from this palm. In the Botanical Gardens of Rio de Janeiro, there is a row of palms eighty feet in height. As ornamental trees they produce a beautiful effect. Agassiz said they brought to his imagination the colonnades of some Egyptian temple.

NATIONAL AMUSEMENTS.

The amusements of a nation are the external signs of its character. They are greatly modified by geographical position and climate. A love of dancing and music is peculiar to some, while wrestling and contests of strength are characteristic of others. The Orientals are renowned not only for their skill with the sling and bow, but also their dexterity in games of chance. Skating has delighted the people of Holland, Germany and Russia from the time when prim-

itive man glided along the ice on the jaw-bone of an ass, to our own time. Wrestling and pugilism were highly esteemed among the Greeks and developed to perfection at the Olympic games. Tumbling and ball-playing are also of great antiquity, equally amusing the polished Athenian and the rude Hottentot of Cape Colony. The old chronicles of the Middle Ages, gleaming with the romance of chivalry, tell us of their tournaments, jousts and tilts, when with clash of armor and glitter of steel and that pomp and glory so peculiar to the knightly character, the noble went forth to single combat for the hand of his lady love. Combined with this passion for martial renown and the exercise of arms was a liking for representation of character and passion, from which we have the theater, although Comedy as well as Tragedy has come down to us from classical times, now adapted to the character of the light, quick-witted Frenchman, now to his grave and less passionate brother, the German. In proportion as nations advanced in refinement so also their amusements advanced with them. Daring feats of gymnasts, or graceful Venetian games were conducted in arenas once drenched with the blood of gladiators, while musical contests or philosophical discussions took the place of the court jester and the buffoon at the royal banquet. In early times religious amusements seem to have been linked closely together as we read in Xenophon of Xenia, the Arcadian, celebrating the sacred rites of Jove, holding public games on the occasion, golden flesh scrapers being given as prizes showing how pure and clean the Greek athletes must have kept their skins. The May-pole and the Yule log of "merrie England" and many games of pastoral life have their origin in pagan religious ceremonies. Archery seems to have been the most famous sport of olden times. Who has not been stirred by the ballad of Chevy-Chase, when—

"Of fifteen hundred Englishmen,
Went home but fifty-three,
The rest were slain in Chevy Chase,
Under the Greenwood tree."

Robin Hood and Little John, William Tell and a host of famous archers embalmed in story and song.

Swimming is a universal amusement. History mentions many famous swimmers,—Horatius Cocles at the bridge. Cæsar at Alexandra, swimming with his Commentaries in his mouth. Leander at the Hellespont, and Agrippina swimming from her galley when her dutiful son, Nero, tried to drown her. It is said that as civilization increases, the display of mere physical force is less esteemed, yet we have, in this age of refinement, bull fights in Spain and prize fights in England and America.

Since the development of modern music in Italy, France and Germany, especially in Germany, the natives work themselves into an ecstasy in what seems to be their favorite amusement. In amusements, as in every thing else, there are the strangest contrasts. In America the fond mother takes her visitor into the parlor to hear her little daughter play on the piano; in China, the little boys take their comrades out to sit on the fence while they watch the "old man" fly his kite.

A WAIL.

The chief-editor says that I must write a funny article for the CYCLE. I told him that it was entirely out of the question, absolutely impossible; but he is inexorable. I'm in for it. I, solemn, sober, sedate, am no humorist. If King Ramases' mummy burst from its cerements, kicked off its rags and danced a polka-redowa, while it whistled the tune, I would probably gaze on the performance with a mild astonishment and perhaps chronicle it as an interesting historical fact, but it would be in the most prosaic, and matter of fact manner imaginable. However, I must wrestle with the monster. I will try and enliven the pages, and throw a glamour, as it were, of the ridiculous over the publication; but I am awfully afraid that the glamour wont glam very much.

I guess I can make a good thing by starting on the Spoopendyke method.

"Where is my shirt-stud, Mrs. S?" said Mr. Spoopendyke as he clawed under the bed for his other shoe. "Isn't it in the bureau drawer, my dear? I guess that you will find it if you only

hunt for it," she said, as she bit off the thread and stuck the needle in the cushion.

"Hunt for it! Do you take me for a mud-digger, scratching gravel all day and fishing things from the bottom of the bureau drawer? Perhaps you think I'm prospecting for gold and that I'm going to spend the unending cycles of eternity in raking up that dog-gasted collar button! Take me for a pearl diver, do you? Just like a woman, —every time you open your mouth you put your foot in it."

But this don't work at all,—my metaphors are strained and moreover they are giving out; I will drift on to the Peck's Sun, bad boy style; I reckon that will work:—"What's this I hear of your father's being tarred and feathered in Oshkosh?" said the grocer to the bad boy, as the youth sat down on the flour barrel and helped himself to a handful of dates.—"Seems to me that your poor old dad has pretty hard lines between you and the rest of the community."

"Oh, pa's all right, at least he will be as soon as the skin grows on his back again. I guess he'll be up in a couple of months. You see he went up to Oshkosh on business, so he said,—and I expect he swelled 'round and slung considerable style for a while; but his little ball of yarn got wound up pretty sudden——

I have racked my brains for some time for an offense for the unfortunate man to commit, and I'm in a dead-lock with myself, whether to make him resemble a man who had brained his ancient mother-in-law, or have him suspected of being an agent of O'Donovan Rossa. So I shall drop that and take up the Chicago Tribune,—"Give me the child!" It was evening, and Beatrice Cenci O'Flaherty stood in the gloaming," ect. racket. Let me muse! Ah ha! An inspiration! The grey matter sloshing around in my cerebral cavity emits the following:—

"Thank you, I don't care if I do!"

The speaker looked off into the distance with a passionate yearning in her deep blue eyes which evinced the depth of feeling which lay in her response. Yes, Nathalie Ethel McCarthy was gloriously beautiful; her golden, three-dollars-a-switch hair crowned with a queenly grace the head, poised so regally on the lithesome form, now bathed in the roseate hue reflected from the purple clouds, hanging like a pall in the sunlit west. Her piquant mouth quivered with eagerness as she lisped her tender utterance, and down her delicate throat the last of the ice cream was being engulfed.

As Algernon DeSydney Smith looked into her perfect eyes, and saw the lovelight reflected therein, saw them light up at his offer of another installment of cream, saw in them the indefinable yearning for the "might-have-beens" of previous years, and as he thought of the extent of his cash and conjectured whether the man at the counter would "hang it up" or whether he would have to leave his Waterbury watch as security, his emotions welled up within him to such an extent——

This goes better than either of the others but I have got my hero into a tight place. He cannot well refuse Nathalie her cream now that it is offered; his available assets are twelve cents, a button and a Waterbury watch (a New England Homestead prize, its value on a par with the button); his emotions, too, are fast becoming prominent features in the case. I reckon that since he had been so confoundedly foolish, I will let him either help himself out of the scrape or he may face the wrath of man and maid alone.

This experience rather disheartens me. Ha! A bright remembrance flashes into my mind. Didn't Bob Burdette say last December that the true humorist makes his humor from his surroundings, takes it from every-day affairs? And here I have been casting all over creation from Brooklyn to Chicago and Milwaukee and have failed. Let me see! Things around me. Here's a racquet on the floor; can't I connect it with a racket? No, that wont work, for, as the Intellect says, "my conscience is my only guide" and I can't conscientiously concoct a racket when I have never been on one. Some one fired the cannon at dead of night, some while ago, but there's nothing funny in that. A senior informs Prof. G. that Green was the historian who had the most influence on Bacon. That's good, but that's the whole of it and wont stand expansion. X's latest puns, they are far from funny. Hang it all! It's no use.

M. A. C, June 1, 1883.

EDITOR-IN-CHIEF-CYCLE:

DEAR SIR :—In consideration of the absolute paucity of ludicrous mental pabulum presenting itself to my cognizance, I conclude that resignation from the responsibilities imposed upon me by you, is my solitary resource. Regretting the necessity of my withdrawal, but remarking parenthetically that it is analogous to my anticipations,

I Remain Ambiguously Yours,

!!!

THE RELATION OF THE COLLEGE TO THE FARMING COMMUNITY.

It is a matter of frequent notice by many of the prominent and influential men of the state and not of uncommon occurrence in our leading newspapers that the Massachusetts Agricultural College does not receive the support and encouragement of that class for whom it was founded, and in whose interest, elevation and advancement it is to-day working, and it may not be out of place to discuss here the relations which the college bears to the farming community.

The advancement of the agricultural class in this state was a matter of discussion for many years prior to the passage of the Congressional act of 1862 in regard to the foundation of agricultural colleges. The first method advised and highly recommended by Governor Andrew was the establishment of an institution like the Bussey Institute, to be attached to Harvard College, and possessing a large endowment. It was however evident that such an institution being made subordinate to another would be eclipsed by it, and have its influence turned in a controlling degree in another direction, and the plan was abandoned. The second method for the general diffusion of knowledge on agricultural topics.

It was plain that the farmer as a class was moving on in the ruts formed by passed generations; that he was adverse to new ideas and new principles; that he could not, and many times would not, see the relations existing between the sciences and practical agriculture. The best way to promote this cause, was by the establishment of a free and independent college, where instruction could be given to the youth and efforts made for the elevation of the calling of the farmer from its position of toil and drudgery to one of intelligence and power.

Such was the idea embodied in the foundation of the Massachusetts Agricultural College. Situated in the beautiful valley of the Connecticut, surrounded by some of the most fertile farms in the state, with its extensive gardens, buildings, laboratories, museums and excellent corps of instructors, why should not it be the place for a thorough practical agricultural education, why should not the college receive its due support from the farming community? Is it the fault of the farmer or the college? It is said that the institution educates away from the farm. But is it not the farmer himself that does this? Does he not shape the boy's desires and cause this wish to leave the farm in favor of city life? Incessant toil, day after day, early and late, drudgery in every sense of the word, is the life of many a farmer's boy. What wonder that he looks for relief in less exacting positions, where *work* and not labor is required,—work, hard, but intelligent and to the purpose, rather than unremitting and dreary, though prehaps profitable labor.

The education of the farm should begin long before the youth is old enough to attend college. A desire for investigation should be roused in his mind while young. The farmer should seek to interest him in the growth and development of the plant, in the birds which fill the morning hours with their charming music, and in the vast numbers of the animal kingdom which may come under his observation. He should awaken in him a spirit of interest in his occupation, by making him acquainted with the marvelous works of nature, which spring up on every hand, by making his home a place of enjoyment both intellectually and socially, instead of keeping him in an eternal treadmill, working him from four o'clock in the morning till eight at night, with no spare hours for amusement and no time for mental improvement.

When the farmer succeeds in elevating his occupation so that it will stand on an equality with other professions, by means of higher intellectual development among his children, and the introduction of a higher system of farming, by the

acquirements of better scientific attainments, he need entertain no fears of educating off the farm.

The first of these he must remember should begin at home, by his own fireside, and the second the Massachusetts Agricultural College is well and ably fitted to promote.

The manifest disregard of a large part of the farming community for their college affords the most effective arguments of its opponents. And even those that do believe in the promotion of agriculture will become disheartened at trying to help those that appear unwilling to help themselves. There are those, who claim that the farmer does not need to become acquainted with the sciences to make a good husbandman, that his is a practical pursuit. Look for a moment at other professions. Who will say that all the knowledge that can be obtained by the artist will be of no value to him.

Take the physician, what is his, but a practical pursuit, and who will say that the six or eight years of preparation he has received will be of no value to him in his practical work?

One can imagine an artist, or a quack doctor with but slight education in their specialties, but whose failure is almost inevitable. An illiterate farmer may manage to live, but he cannot truly succeed without understanding the rationale of his vocation. What occupation is there that demands a more universal acquaintance with nature's laws. The farmer unlike the mechanic is dealing with live matter. He requires a thorough knowledge of Chemistry, for it lies at the bottom of all his work. He needs to know the relations existing between the atmosphere, the soil and plant. He needs a knowledge of Geology, to understand the formation of the soil, and to know the changes that are daily taking place on the earth's surface. He requires a thorough acquaintance with the animal kingdom. In fact, an intelligent comprehension of almost every achievement of art and science, is needed within his domain. Agriculture like every other industry will be best promoted by its educated and enlightened practitioners. It has been well said that, "The more extended our general education supplemented by a special, the better able shall we be to meet the difficulties in the way of our agricultural interests." It is said that money is power, and in this country we may safely add, intellect is power.

When Daniel Webster was once asked by a young man as to the advisability of the adoption of law as a profession he said, "There's plenty of room at the top, but the lower stories are crowded." Thus, with the farmer. What we want is intelligent men and the farm will not be a field of labor merely, agriculture will be raised to the level of other professions, and the farmer need entertain no fears of being looked down upon. His word will be power. His occupation will be accorded the same dignity it has received in other, and older countries of the world.

A recent editorial in a prominent Boston daily gave a pithy, model address to a graduating class, which is so out of the usual rut and full of common sense, that it will not be out of place to directly quote it. Observing that much of the advice given by college presidents in regard to future prospects of graduates is misleading, it remarks that "if the head of the institution would address them somewhat as follows he would be doing them the greatest service:" "Young men, you are about to go into the world to strive for yourselves. You will find it an exacting world. It has no place for you; it does not welcome you without trial; it will not accept your diploma as an evidence of fitness for work or that you are prepared to take charge of the universe. The world knows, as I know, that you are untried; and it will give you neither confidence nor position, until you show yourself to be deserving of both. In fact, it will at first rebuff you; it will certainly do so, if you assume an air of superiority, or give it to understand that you know it all. It will tell you that you have learned very little during your four years, if you have not learned that its study and discipline are simply designed to enable you to acquire knowledge more surely in the future. If you have spent your college course properly it has furnished you with tools with which to work if you have the good sense to know or to desire to know how to use them. If you have not, if you are

presumptuous and conceited, you will surely be knocked down and trodden under foot. Your college course has not fitted you to go to the front at once. None of you will stand at the head of the Bar in three years; the public will not be reading your books next season; few of you will be called to take charge of the higher institutions of learning during the next year; no business house will call you to its head at once; no large newspaper will send you a pressing invitation to become its fountain of ideas at a salary of $25,000 per annum as soon as its owners hear of your graduation. These positions are all within your reach; but you must begin at the bottom with other men and work as most other men do, in order to attain the higher places. You, if you are as industrious and as persevering as those who have not had your advantages, will be much surer of the prizes and at an earlier day than other competitors, because during the past four years you have been preparing yourself for the work. At the outset, you must go into the thick of the fight and take the first place in the ranks which is offered you or which appears to be vacant."

—[*Boston Journal.*

CHEMISTRY OF PLANT GROWTH.

VALEDICTORIAN'S ORATION DELIVERED BY C. H. PRESTON.

It is almost impossible at the present day, to believe that the ancients who were so well versed in the arts and sciences should not have discovered the intimate relation between chemistry and agriculture; for although they carried on a remarkably intelligent cultivation of field crops yet it is but little more than forty years since the present theory of the true relation of the soil to the plant was first proposed.

It was the period in the history of agriculture when advocates of the nitrogen theory of fertilization were most numerous and this only brings into a clearer light the remarkable genius of Liebig, who breaking away from the conservatism of the times, originated the theory now generally accepted, that to obtain the greatest yield of field crops it is necessary to provide an abundance of those constituents which the atmosphere does not furnish.

Among the many believing nitrogen to be the essential element for restoration to cultivated soils, perhaps the most enthusiastic was Boussingault.

Liebig did not deny that nitrogen was essential to the plant but he went still farther and claimed that all elements found in plants are essential to their growth and that if any one was wanting, another could only replace it to a limited degree.

On the basis of the mineral theory, all mineral constituents must be restored to the soil, but as an excess of one element will produce no effect, the farmer who desires to fertilize his land on rational principles, should know the past history of his soil as well as he does the pedigree of his thorough-breds.

Repeated experiments have proved that plants may make a limited growth on organic substance alone, but that deprived of mineral matter they can neither come to maturity nor ripen their seed.

One important reason why land cannot be fertilized intelligently is owing to the imperfectly known chemical action of both plant and soil, but with chemistry as a means, we may expect in the near future a solution of this difficult problem.

Another subject not generally understood is the effect of certain mineral salts upon the soil. It is a well known fact that different potash compounds produce widely different results in the quality and quantity of various farm crops, but their mode of action is a problem which has till recently defied solution.

Too many agriculturists at the present day are given up to imperfect theorizing. Having obtained a few facts from some poorly conducted experiment where all the conditions were not controlled, they proceed to generalize and build up a theory which frequently applies only to their own case.

Liebig says of the true theorist "he is not the advocate of an opinion; he does not give us instead of an explanation, the image which he has formed in his own fancy of a phenomenon or natural process; but he endeavors to ascertain by observation and experience all those conditions which have co-operated to produce the phenomena; and in the course of his researches he tests

every conclusion at which he arrives and every opinion which guides him, by experiment."

Science has not changed the fundamental modes of agriculture, for they are essentially the same to-day as two thousand years ago, but it has pointed out the underlying principles and has opened many new fields of investigation.

It is not claimed that agricultural chemistry will revolutionize any particular portion of the art of agriculture. But it is claimed that by its aid the production of field crops may be greatly increased and thus double the profits of the farmer.

The province of agricultural chemistry is simply to solve the principles of both plant and animal growth, while the practical agriculturist must do the rest.

The great difficulty experienced in the application of chemistry to agriculture has been due to the fact that the majority of the farmers of to-day are imperfectly prepared to receive the truths imparted by chemistry, and are thus many years behind the practitioners of other arts.

The chemist should confine himself to purely chemical questions, leaving to the practical agriculturist the application of the results he acquires. If such a course is pursued it seems reasonable to believe that in the not far distant future, agriculture, by the aid of chemistry, will reach such perfection that instead of being looked down upon as an occupation, it shall take its proper position among the professions.

THE NATURAL HISTORY SOCIETY.

One of the most interesting features of college life this year has been the Natural History society. The rudiments of knowledge may be instilled by compulsory tasks, but to form the scholar, to really educate the man, there should be voluntary study. With this object in view and to promote original scientific investigation and develop a truly scientific taste, the society was founded early in the Fall term by some members of '85 and '86. Their undertaking has been very successful, great interest being shown from the start and the society at present numbering the best men in college from all the classes. We have the largest of laboratories to work in,—the farm.

The phenomena involved embrace the whole of animal and vegetable life from the tiniest seed to large forests, from the smallest insect to vertebrates. The whole field of chemical, geological and biological forces. Through the kindness of the late Dr. Chadbourne a suite of rooms has been assigned the society in North College for holding meetings and forming a collection and as a working place generally. The society design fitting up these rooms with suitable furniture, giving each member a work table and accommodation for biological study.

In April, Mr. C. W. Eddy, of Ware, the celebrated amateur microscopist, gave an interesting and instructive lecture and exhibition, showing some especially fine specimens of diatoms. In the latter part of May, through the kindness of Prof. Goodell, the society enjoyed a "Field day" when they and invited guests to the number of eighteen visited the lead mines at Loudville, where the rare chromate of lead is found. An interesting day was spent in studying the geology and botany of the region.

Besides the regular paper read at each meeting, a topic proposed beforehand is discussed, upon which each member reads up and gives his experience, thus contributing his mite toward the general fund of information. One, especially interested in bird life, treats of the birds of the month, another of insects. The following are a few of the longer papers read before the society: "Coloring Matter in Plants," "The Hawk Family in New England," "The Fauna and Flora of Labrador," "The Comparative Anatomy of the Ear," "The Intelligence of Ants," "Mental Powers in Insects," besides numerous short papers on lichens, mollusks, etc.

HAWAIIAN TRADITION OF THE ORIGIN OF FIRE.

Maui and his wife Heua had four sons born to them, whose names were Maui-mua, Maui-hope, Maui-kiikii and Maui-o-kalama. These four were fishermen. One morning just at the breaking of

the dawn, Maui-mua rouse dhis brothers to go fishing. So they launched their canoe and started for the fishing ground. Having arrived there, they had not fished very long when one of them saw the light of a fire on the shore, and said to his brothers "Behold, there is a fire burning; whose can this fire be?" And they answered, "Whose indeed, let us first get some fish and then we will return to the shore and get our food cooked." So after they had caught some fish, they returned toward the shore, and when the canoe reached the beach Maui-mua leaped ashore and ran toward the spot where the fire was burning.

Now the curly-tailed alae—mud hens—were the keepers of the fire and when they saw him coming they scratched out the fire and flew away, Maui-mua was defeated and returned to his brothers, Who said, "How about the fire?" "How indeed," said he. "When I got there, there was no fire, it was out. I supposed some man had the fire, but it was not so; the alae are the keepers of the fire, and our bananas are stolen."

When they heard this they were angry and decided not to go fishing again, but to wait for the next appearance of the fire. After waiting several days and not seeing the fire, they went fishing, and behold there was the fire. Thus they were continually tantalized; only when they went out to fish would the fire appear, and when they returned they could not find it. This was the trouble; the curly-tailed alae knew that Maui and Heua had only those four sons, and if any of them staid on shore to watch for the fire while the others were out in the canoe, the alae knew it by counting those in the canoe, and would not light the fire. Only when they could count the four men in the canoe would they light the fire.

So Maui-mua thought it over, and said to his brothers, "I will stay ashore to-morrow morning when you go fishing. But you must take the tall calabash and dress it in kapa—cloth—and put it in my place in the canoe. They did so, and when they left the beach the alae counted four figures in the canoe, and they lit the fire. Maui-mua crept close to them unperceived, leaped forward and seized the curly-tailed alae, exclaiming "Now I will kill you, you scamp of an alae, for it is you who are keeping the fire from us." Then the alae answered, "If you kill me the secret dies with me and you will not get the fire." Then Maui-mua began to wring its neck. But the alae again spoke and said, "Let me live and you shall have the fire." So Maui-mua said, "Tell me, where is the fire?" The alae replied, "In the stalk of the ape plant." So by the direction of the alae, Maui-mua began to rub the leaf-stalk of the ape with a piece of stick, but the fire would not come. Again he asked, "Where is the fire?" The alae said, "In the leaf-stalk of the kalo," and he tried that also without success. And that is the reason why there is a long hollow on the leaf-stalk of ape and kalo to this day.

Again he asked, "Where is this fire you are hiding from me?" The alae answered, "In a green stick." And he rubbed a green stick, but got no fire. So he went on until finally the alae told him he would find it in a dry stick. And so he did. But Maui-Mua, in revenge for the conduct of the alae, after he had got the fire from the dry stick, said, "Now there is one more thing to try," and he rubbed the top of the alae's head until it was red with blood, and the red spot remains there to this day.

SERENADE.

Softly the summer moon her silvery light discloses;
Sweetly in garden bower arises scent of roses;
'Neath thy lattice fair, I wait for thee;
Thy starry eyes I wait to see.
Come forth, my love;
My love, come forth.

Softly by garden wall sounds the tinkling fountain;
Gently the breezes blow o'er the shadowy mountain;
'Neath thy lattice fair, I wait for thee;
While zephyrs flit across the lea.
Come forth, my love;
My love, come forth.

Sweetly the evening bells ring out the passing hour;
Softly in dreamless sleep nods each bud and flower;
'Neath thy lattice fair, I wait for thee;
Thy starry eyes I wait to see.
Come forth, my love;
My love, come forth.

PASTORAL.

In the golden sunset gleam,
Beneath the twinkling stars,
My Mollie driving home the cows,
Lets down the mossy bars.

Only a drowsy hum of bees,
A song of evening bird,
A murmur of the rustling corn,
The only sound that's heard.

Wistful Mollie! Does she know
I'm waiting by the brook?
Roguish Mollie! Will she
Give me smile, or word, or look?

Sunset fading softly,
Shadows o'er the sky,
While through the dusky woodlands
Come laughing Mollie and I.

CYCLE SUPPLEMENT.

The CYCLE Supplement will be issued at the close of graduation exercises on Wednesday morning. It will contain a complete account of the Commencement exercises and list of prizes. Do not fail to purchase a copy. Price two cents.

MINUTIÆ.

VOL. V.

Ten new Bachelors of Science.

The seniors are unfortunate—no president's reception.

Two, possibly three, Brazilians enter in the incoming class.

Eight workers in quantitative chemistry during the past term.

Do not fail to hear Dr. Geo. B. Loring to-night in the Drill Hall.

The gas machine which supplies the "lab" has given entire satisfaction.

Mr. Hadwen kindly furnishes bunting for the decoration of the drill hall.

"Has the bill passed?" was the daily question during the first of the term.

It is said that our assistant professor of agriculture is passionately fond of shower baths.

Little Corinne with her "Peek-a-boo" captured the tuneful hearts of a number of Aggies.

A Soph. thinks that Methuselah should have been king of England; it would have simplified things so.

A cynic defines marriage as an insane desire to pay for the board and lodging of another man's daughter.

Tennis, though late in putting in appearance this spring, has found quite a number to pay its courts court.

A large number of '82 men are expected back at commencement. The classes of '73, '77 and '80 hold reunions.

A number of students are indulging in amateur farming on land rented from the college. Potatoes are the favorite crop.

"Don't be afraid! I wont hit you. I'll try not to," and the Amherst fresh. felt sufficiently encouraged to strike out.

Eighty-three has experienced considerable trouble with its class supper arrangements and has finally decided to try Boston.

It was feared that an echo would interfere with the use of the drill hall as an audience room, but happily it is free from such trouble.

Senior vacation from Tuesday, June 5th, at noon, till the succeeding Monday, being especially modeled to suit a prominent member of the faculty.

Some thirty odd legislators visited our halls early in May, were amused by the drill, and interested in the experiment station and the college.

The subject given for Eighty-Three's military thesis "Military Education as a Factorr in American Government" proved very difficult and rather abstruse.

H. J. Wheeler represented the college at the B. U. commencement on June 6th. His thesis was one of two to which the audience paid continued attention.

The rebuilding of the plant house will not be completed at commencement; judging from the plans, the new structure will be a great improvement upon the old.

The students who leave for home this week anticipate a summer of heaven; those who remain in this blistering hot valley, one of—well, call it slow death by frying.

The museum has recently received from the Smithsonian Institute a large collection of Massachusetts invertebrata, which Mr. W. A. Stearns has been cataloguing.

The latest version of the Garden of Eden affair is that of John T. Raymond. Eve generously gave Adam half her apple and the mean cuss turned state's evidence.

"Another dismal day of doleful dumps," last Friday night as in grim array Eighty-Five laid on the funeral pyre all that remained of the dear departed Trig. O. Nometry.

Dr. Goessmann's fertilizer reports for 1882 contained the largest number of analyses ever published in one report, but it is expected that that of the current year will exceed it.

Nearly all the Seniors matriculate at B. U. this year, the only exception being a Boston man who lives under its very shadow. Truly the university is not honored in its own country.

Cucumber green is the newest shade for ties. The man who is tied up in a knot from the cucumbers he has eaten will have the intense satisfaction of knowing that he is in style.

Of the graduating class,—four intend to pursue post-graduate studies in this institution, one studies medicine, one enters business, one goes in dairy business and the rest are still on the fence of indecision.

It would seem that the Seniors were not entirely satisfied with the elocutionary training afforded by the college for their theses, as every one of the speakers has taken private lessons from another instructor.

The following are a few quotations from a note book in chemistry. "When clocium of chlolide which has been in the sun is put into a dark room, it emits a dark light". "Fluorine is the only thing we dont know any thing about." "Formula of water is H^2 O^{16}."

The graduates from the various departments of Boston University this year are as follows :—Liberal Arts 25, Agriculture 9, Music 2, Theology 13, Law 51, Medicine 35, All Sciences 9; total 144. Among the graduates of the Law School was N. N. Jones, formerly of the class of '82.

The North Amherst Dramatic Association gave a successful entertainment for the benefit of Dakota mission. It is now proposed that, in view of their recent disastrous Southern trip, the Dakota mission give an entertainment for the benefit of the N. A. Dramatic Association.

When the article entitled "A Wail" was read before the editorial board for its judgment, it was suggested that the board enact the whale and throw it up a la Jonah. The culprit was thereupon condemned to collect all bills due the publication and has henceforth resolved to shun the fatal pun.

The Associate Alumni have taken an excellent step in securing the services of Dr. George B. Loring as lecturer on Tuesday evening of Commencement week. An abstract of his remarks will be found in the Supplement which will be as extended as the limited time before going to press will allow.

Governor Butler has assigned to the M. A. C. the Massachusetts set of standard weights and measures, sent to each state by the national government. The measures are handsome pieces of workmanship and are kept for purposes of comparison in the Botanic museum, where visitors can readily see them.

Reading clubs have been quite popular this year. One of them read Goethe's Faust (Taylor's translation), another spent their Sunday evenings over Milton's Paradise Lost, while still another read the most interesting of Shakspeare's plays. A German club read during the winter a large number of the finer German ballads of Schiller, Burger, Heine and others.

During the past term the college library has been increased by the generous gift of Mr. H. S. Carruth, formerly of the class of '75, who has promised the college twenty five dollars worth of books yearly for at least four years. Mr. C. is junior member of the young and flourishing pub lishing and importing book firm, W. B. Clark & Carruth, 340 Washington St., Boston.

Mail carrying has been conducted in a most shiftless manner during the past year; the morning mail in particular, has been almost invariably late and been through many different hands. It finally became fairly dangerous to have valuables go by the college mails and several students have hired boxes of their own.

We hope to see an improvement in this line next year.

During previous years there have been two printing establishments in town and competition has been sharp. Consolidation, however, has taken place and bids were high for the printing. We have, however, accepted more advantageous offers in another direction and this volume comes from Easthampton. The supplement, however, will be issued by Mr. Williams, as it would be impossible in the short time at our disposal to send it to Easthampton.

PERSONAL.

'71.

The only change in the address or occupations of the pioneer class, is that of F. LeP. Whitney, who is in the oil stove business at 288 Westminster St, Providence, R. I.

'72.

J. W. Clark in addition to his duties as Asst. Professor of Agriculture, was installed as Farm Superintendent at the beginning of the spring term.

F. B. Salisbury has not been heard from for several years but the catalogue regularly places him in Kimberley Diamond Fields, South Africa, and of course the catalogue knows.

S. C. Thompson has left Natick and entered the Lowell City engineer's office.

'73.

Celebrates its decennial this year.

Chas. Wellington is studying chemistry at Leipzig.

D. P. Penhallow's work at Houghton Farm has attracted considerable attention in scientific circles.

S. S. Warner, '73, J. F. Barrett and G. R. Dodge, '75, are all that are left of half a score of the college graduates who have been in the employ of the Bowker Fertilizer Co.

'74.

"The appointment of Asa W. Dickinson to the position of Assistant Collector of the Port, is a tribute to his personal worth of which he may well feel proud. He is a young lawyer of fine parts, and one whose ambition will make his abilities serviceable in raising him to distinction."

—*Jersey City Tattler.*

E. H. Libbey, '74, and W. H. Bishop, '82, are connected with Hiram Sibley & Co., Seedsmen, in the garden and experimental departments respectively.

H. L. Phelps has begun manufacturing fertilizers for himself, in addition to acting as agent for others, and is making a good article.

'75.

J. A. Barri and E. D. Chittenden (special) have associated themselves with Lucius Sanderson, as the National Fertilizer Co., with their factory at Bridgeport Conn. Their fertilizers are high grade, and of remarkable mechanical condition. A mistake in the Connecticut Experimental Station analyses of their articles threw them temporarily under a cloud; the mistake was rectified and their success seems very probable.

E. B. Bragg has left Bowker's employ and become New York agent for the Pacific Guano Co.

A. A. Southwick has succeeded F. P. Taylor, '81, as superintendent of Mr Beach's "Vine Hill Farm" at West Hartford.

'76.

C. F. Deuel was recently married to Miss Lucy A. Fish of Amherst.

W. A. Macleod has recently become a happy father.

W. H. Porter has left Hatfield during the past year to assume the position of assistant superintendent of extensive greenhouses in Watertown.

T. E. Smith was recently in town for a few days.

G. P. Urner is in Montana sheep raising.

J. M. Sears is a fertilizer agent in Northampton.

'77.

Chas. Brewer has been studying floriculture at the plant house for the past few months, intending to make that branch his future employment.

Atherton Clark is book keeper at the Hill's Hat shop in Amherst.

Joseph Wyman has dropped market gardening for book keeping at 60 Blackstone St., Boston.

'78.

David E Baker is house surgeon at the Boston City Hospital. Four M. A. C. men have within the last two years graduated there and two have

received this appointment, for which there is great competition.

J. N. Hall is physician in Denver, Colorado.

Lockwood Myricke has left the employ of the Pacific Guano Co. and is taking a post graduate course in chemistry.

J. H. Washburn is professor of agricultural chemistry in the Storrs Ag'l School, Mansfield, Conn., and contemplates a German course in chemistry in the near future.

Guy Morey is in the treasurer's office of the consolidated telephone companies, in Lowell.

'79.

R. S. Dickenson is a ranchero in western Nebraska.

Chas. Rudolph is a lawyer in Mitchell, Dakota.

G. P. Smith has been acting as "Chit's" valley agent during the winter and spring and reports good sales.

W. A. Sherman has hung out his shingle as a veterinary surgeon at 98 Pawtucket St., Lowell, and R. W. Swan his, as an M. D., at 150 Pleasant St., Worcester.

'80.

Has its first reunion this year. Of its seven graduates, Fowler, Gladwin and Lee are in the far West, mining, Parker and Stone farming in Massachusetts, Ripley in the grain business in Worcester, while McQueen is half way between the trios, Treasurer of Standard Book Co., 3805, Lake Ave., Chicago.

'81.

F. H. Fairfield is chemist to the Standard Fertilizer Co., 19 Central St., Boston, Mass.

Austin Peters graduated at the American Veterinary College last winter. He is evidently on the presidential road, having been president of his class at the Vet. College and vice president for '81 of the M. A. C alumni association.

F. P. Taylor is in Tennessee near the North Carolina line and intends to farm it in the Piedmont region.

J. L. Smith has been Chittenden's agent during the past year in Barre.

H. E. Chapin is a professor in the Granville Military Academy in Central New York.

'82.

E. P. Bingham is making disinfectants, and has been married during the past year. No. one of '82's graduates.

H. S. Brodt is on the "Nickel Plate" R. R. survey, as are also F. H. Joyner and H. L. Wheeler of '82.

S C. Damon has made a mark in the world since graduation, is president of the Lancaster Farmers' Club, school committee-man and on the high road to fame and honor.

C. W. Floyd has been a P. G. in chemistry during the major part of the year, although for a while incapacitated by sickness.

C. D. Hillman is raising oranges in California.

G. D. Howe and W. A. Morse are at the Poughkeepsie Business College.

C. S Plumb is assistant editor of the Rural New Yorker.

W. E. Stone is succeeding well at Houghton Farm as Prof. Penhallow's assistant.

L. R. Taft has acted as Prof. Maynard's assistant at the plant-house during the past year.

A. H. Taylor is in Iowa, stock-raising.

J. E. Wilder is drumming in Illinois and Indiana for a Chicago leather firm.

J. S. Williams spent the winter in Rome and Naples.

A. F. Shiverick spent the winter at Charleston, S. C., as chemical clerk for the Pacific Guano Co.

IN ROSE-TIME.

I plucked a spray of roses fair,
One morn in June, long, long ago,
To bind my darling's silken hair
With crimson bloom.

The breezes kissed the dewy leaves,
The branches nodded to and fro,
The jeweled roses seemed to speak
In whispers low.

Like distant melody of bells
At eve, from some cathedral chime,
Comes that sweet vision of the past,
Of olden time.

* * * * *

Again amid the roses fair,
I wander as in distant years;
But only press their crimson leaves
Through tender tears.

THE CYCLE.

Supplement.

Containing an account of the Exercises of Commencement Week,
List of Prizes, Etc.

COMMENCEMENT EXERCISES.

Eighty-Three's Commencement was unfavored by the weather gods, being the most rainy anniversary for several years.

On the Friday evening before Commencement Week Prof. and Mrs. Miles gave a very pleasant reception to the members of the Senior class.

The Doctor's kindness was highly appreciated, and the class spent a most agreeable evening in conversation and looking over his many treasures in art and literature.

At about eleven o'clock of the same evening a ghastly, torch-bearing band assembled in dread array, behind an impromptu hearse, bearing a sable-clad coffin and drawn by an emaciated steed: led by one who seemed the fiend incarnate, the procession wound its devious way around the college buildings. It seemed as if Shakespeare's "sheeted dead, did squeek and gibber" in our midst." Their wanderings over, the gruesome ghouls gathered around a funeral pyre erected upon the campus, and with appropriate incantations cremated all that was mortal of Miss Triggie O'Nometry.

The high priest, assisted by two vestal virgins, bore the swinging censer round the blazing pyre, and while the incense rose upon the air and the immortal of "Trig." was being wafted to a higher sphere, one of the ghouls spoke in touching terms of the many virtues of the dear departed, and an appropiate dirge was chanted by the attendant demons. Two cannon rounds were fired over the remains, and with a war-dance Eighty-Five's cremation was over.

The first regular exercise of Commencement was the Farnsworth Prize Declamations in Drill Hall. During the previous week the hall was trimmed with flags, bunting and military accoutrements in a very tasteful manner, which served to break the rather bare appearance of the beams and rafters. A large stage was erected at the southern end of the hall, and over it, the most noticeable thing in the hall, hung an oil painting of the late President Chadbourne, painted by Mr. Lincoln of Providence, and presented by the Trustees. The features are accurately portrayed, and the familiar countenance seems almost as if about to speak. A heavy gilt frame appropriately sets off the picture.

A large crowd—the size of which did not appear in the large structure, listened to the following speakers:

Freshmen.—A. L. KINNEY, "Death-bed of Benedict Arnold;" C. W. CLAPP, "The Minute Man of '76;" E. D. WINSLOW, "How he saved St. Michaels;" A. B. COPELAND, "Zagyoni's Charge."

Sophomores.—L. C. LEARY, "The death of Eugene Aram;" G. H. Barber, "The Impeachment of Verres;" C. S. PHELPS, "Defence of Coercion;" BENONI TEKIRIAN, "Appeal to the Crusaders."

The speaking was the best heard here for several years and was deservedly applanded by the audience. Music was furnished by the Easthampton Orchestral club. The judges were Prof. Neill of Amherst College, James H. Webb '73, and T. E. Smith '76, probably the best board for many years, each one being a specialist in oratory.

As usual the fraternities held their reunions Monpay evening. At the close of the speaking the D. G. K. fraternity convened in secret session in its chapter hall. after which adjournment to Frank Wood's took place. This popular caterer set out the fifteenth annual banquet in most satisfactory style, to which a score did full justice. The feast of reason (mingled with a considerable amount of unreason) followed that of matter, and as the dawn was breaking the merry company fared homewards.

The Q. T. V. fraternity held its reunion in its chapter hall, and had a glorious time. A number of alumni were back to share in the festivities of the occasion, and to tell the tales of days gone by. Songs and stories, toasts and jokes made the hours fly fast, and mirth was the order of the day.

The Phi Sigma Kappa fraternity banqueted at Mr. Muzzey's restaurant, and feasted on the delicacies which he kdows so well how to prepare.

Their reunion was, as it ever is, most enjoyable. add alumni and undergraduates mingled together in friendly communion.

The college Shakspearian club held its supper in its club-room, Mr. Muzzey catering. A number of '81 and '82 men, founders of the club, were back to join in the festivities.

The examination of candidates for admission to the college was held in the Botanic Museum at nine o'clock on Tuesday morning. A considerable number undertook the severe ordeal—the free scholarships and the $100 Essex Co. Agricultural Society prize proving incentives. At 10 A. M. the Senior agricultural examination for the Grinnell prizes began in the Laboratory lecture room. The judges were: Messrs. Geo. Jewett, W. R. Sessions, D. E. Damon, A. C. Varnum, and Jonathan Buddington, who questioned the graduates on the following topics:

1. Define Agriculture,—art and science. What principles of the art were known to the ancients. 2. Relations of science to the art of agriculture, —advantages of a knowledge of science in agriculture. 3. How are improvements in the art of agriculture to be made;—methods of experimenting. 4. Relations of the physical condition of soils to fertility;—methods of improving the physical characteristics of soils. 5. Pioneer farming;—its methods and tendencies. 6. Mixed husband-

ry;—general principles;—topics to be considered in planning a complete system. 7. Rotation of crops;—general principles;—arrangement of crops in rotation. 8. Influence of system of rotation on the supply of barnyard manure. 9. Barnyard manures;—care and application. 10. Soil exhaustion;—fertility and condition;—nitrification;—practical applications. 11. Principles of draining;—open drains;—covered drains of wood and stone. 12. Tile drains;—different forms;—laying out and construction. 13. Relations of live stock to a system of husbandry. 14. Modern methods of stock-breeding. How are the qualities of animals to be determined? 15. Law of Heredity;—its applications in breeding. 16. Atavism;—latent and dominant characters. 17. Law of Variation;—how are improvements in animals to be made? 18. In-and-in breeding. 19. Cross breeding. 20. Relative influence of parents.

On Friday last the class passed the written examination for the prizes, writing on three topics, "Mixed Husbandry," "Nitrification," and any one of the following—"Barn-Yard Manure," "Stock-breeding," "Agricultural Improvement and Draining."

Tuesday afternoon the exhibition drills of the classes took place, which a small assemblage witnessed. The threatening weather deterred many from witnessing the drills. Manual of arms, sabre drill, bayonet exercise, skirmish drill, artillery drill and mortar practise occupied the first part of the afternoon, and were closely watched and evidently enjoyed by the visitors.

At half-past three the battalion marched into the drill hall where they and the visiting friends listened to the reading of the prize military theses by cadets J. B. Lindsey and S. M. Holman. The military diplomas were then presented to nine of the graduates, by Hon. William H. Haile, chairman of the Senate Committee on Military Affairs, who made a few felicitous remarks on military training in educational institutions.

On Tuesday evening a large crowd assembled in the drill hall and listened with marked attention and approval to the address of Hon. George B. Loring, U. S. Commissioner of Agriculture, delivered at the invitation of the Alumni Association. The speaker was introduced by Mr. Webb, '73, who acted in the stead of Prof. Penhallow, who was unavoidably absent.

Dr. Loring chose as his topic Massachusetts Agriculture and agricultural education. In the opening part of his discourse, he furnished many interesting statistics in regard to the crops of nation and state and the comparative profits of farmer and mechanic. The land-owning clergy, first seen in this country in the time of the pilgrim fathers, were the precursors of the class of educated farmers and laid the foundation of the idea that it was in educated, well-directed work that success was to be attained. To them and their successors we owe the first conception of this idea, so nobly realized in the establishmont of colleges fitted to carry out this purpose, to turn out not plow-joggers but men thoroughly imbued with what Matthew Arnold calls the aim of all study, the acquirement of a sense of conduct and a sense of beauty. The regular address was closed with a feeling tribute to the worth of the late President Chadbourne.

Pending the expected arrival of His Excellency and the staff, Dr. Loring gave a graphic description of the U. S. Department of Agriculture.

The arrival of Gov. Butler was signalled by great applause, to which he responded in a fitting speech, which was heard with great interest.

After the exercises were closed a number of those present availed themselves of the opportunity to shake hands with the Governor.

The alumni meeting on Wednesday morning was well attended, and considerable important business transacted.

The graduating exercises occurred in Drill Hall, at eleven oclock, the speakers being as follows:

Homer J. Wheeler, "Agricultural Education;" Edgar A. Bishop, "John Wilkes;" Samuel M. Holman, Jr., "The Fall of Constantinople;" David O. Nourse, "Leon Gambetta:" Domingos H. Braune, "The Palm Tree and its Uses:" Joseph B. Lindsey, "The Spirit of Liberty;" Charles H. Preston, "Chemistry of Plant Growth. and valedictory.

The audience was attentive and appreciative. The Boston University diplomas were presented to the matriculants of the institution, with a few well-chosen words, by President William F. Warren, following which His Excellency the Governor addressed the graduating class in his usual accomplished manner and conferred the college diplomas upon the ten graduates.

Prizes were announced as follows:

Farnsworth Gold Medals.—G. H. Barber '85, E. D. Winslow '86. *Farnsworth Silver Medals.*—C. S. Phelps '85, A. B. Copeland '86. *Hills' Botanical Prizes.*—1st, C. H. Preston, $15; 2d, C. W. Minott. *Military Prizes*, awarded for best essays on "Military Education as a Factor in American Government."—1st, J. B. Lindsey, $25; 2d, S. M. Holman, Jr., $15. *Grinnell Agricultural Prizes.*—1st, D. O. Nourse, $50; 2d, D. H. Braune, $30.

THE CYCLE.

VOL. VI. TUESDAY, JUNE 24, 1884. NO. 1.

PUBLISHED BY THE ALEPH CHAPTER OF THE Φ. Θ. Χ. FRATERNITY, MASS. AGRICULTURAL COLLEGE.

ORDER OF EXERCISES.

For the Fourteenth Graduation Anniversary, June 22, 23, 24 and 25, 1884.

SUNDAY, June 22.—Baccalaureate Sermon, in the Chapel, at 10-30 A. M.

Address Before the Young Men's Christian Association, by Rev. H. W. Lathe, in the Chapel, at 7-30 P. M.

MONDAY, June 23.—Farnsworth Prize Declamations, in the Drill Hall, at 8 P. M.

TUESDAY, June 24.—Public Examination of the Graduating Class in Agriculture, for the Grinnell Prizes, in the Mathematieal Recitation Room, at 8-30 A. M.

Examination of Candidates for Admission to College, in the Botanic Museum, commencing at 9 A. M.

Review of Cadets, by Governor Robinson, at 10 A. M.

Addresses, by his Excellency, George D. Robinson, and others, in the Drill Hall, at 11 A. M.

Alumni Dinner, at 2 P. M.

President's Reception, 8 to 10 P. M.

WEDNESDAY, June 25.—Alumni Meeting, in the Laboratory Lecture Room, at 8-30 A. M.

Graduating Exercises, in the Drill Hall, at 10 A. M.

Address, by C. C. Coffin, Esq.

Thesis, with the Valedictory Address, by Elisha A. Jones.

IN offering to the college world the sixth volume of the CYCLE, our object is to make it as near as possible the exponent of M. A. C. College papers as money-making schemes are never a great success, and as literary ventures they can hardly be placed among the classics. So we neither expect munificent rewards nor ineidental glory. We shall feel fully rewarded if we, in our transit, can furnish favorable data for comparing the past with the present. We hope that this edition of the CYCLE will be received with as much enthusiasm and favor as those of former years. We have stated its object, also its character, of its success we leave the reader to judge.

As time rolls by and our paper grows, we are glad to show, if not to a very marked extent, some improvement in its general appearance. This number is the first to receive the addition of a colored cover. It has been our endeavor to furnish reading that will please all, and although this is found to be a serious task, yet we hope none will feel that our attempt is entirely fruitless.

IT is interesting to observe the comments of the various newspapers on the work and aim of the M. A. C. When will Massachusetts papers remember the old aphorism—"Allus pushin him down am de shure way to keep the chile from risen"? This institution fills a plaee in the state which no other institution does. The public are beginning to take an interest in the college, which bids fair to rival those whose only virtue is that they have the precedent of a longer existence. And why? Because the public realizes that modern life needs men trained for the emergencies of the present, not men steeped in ancient lore and dusty with the cobwebs of the past. Our college is peculiarly adapted to the general development of the modern man, and affords a training that enables a man to step right

out into life and effectually utilize his knowledge. For a little while, like every other creature in its infancy, it needs nourishment, and it is a child well worth raising.

THE dinner of the alumni this year bids fair to be a memorable occasion in the history of M. A. C. Men whose hearts are not made of ice are generously inclined when taken at the fever heat of enthusiasm, and what will bring this about better than a reunion of old friends bound together by the common tie of affection for their alma mater? The occasion offers a favorable opportunity to push forward the library question. This is one of the real demands of our growing college. Our gratitude is due to them for the excellent selections already purchased. A pressing need at present is a gymnasium. The drill hall might be easily fitted up for this purpose. It would in no way interfere with its original design. It is a notorious fact that all our class leaders in the various colleges, as Harvard, Yale and Princeton are men eminent in athletic sports. We beat Harvard at one time, and we may do it again. We feel sure there will be little difficulty in obtaining money to meet a necessity which is vitally important to the welfare of the college. For this reason we make the suggestion, and we sincerely hope that some person of energy and influence will take hold of the matter.

THERE are a few fellows in college who are unable to discriminate between rational, healthy fun and sport which is in poor taste. The moving and partial destruction of the college property is doubtless, from the originators' standpoint, exceedingly brilliant and convulsively funny, but to the majority of men here the thing is simply foolishness. Anything which tends to bring the college into unpleasant notoriety is a matter to be regretted. The fellows who are responsible for this probably acted thoughtlessly, and by this time see their mistake. If M. A. C. is to be a *college*, the students must be men.

EARLY in the term it was reported that Dr. Miles would probably not be retained as Professor of Agriculture another year. A petition sent to the Trustees in his behalf by the students, we are glad to learn, has been acted upon favorably. Dr. Chadbourne said when (through his instrumentality) Dr. Miles first came to the college, that he considered the Doctor the best agriculturalist in the country. Since his advent with us we believe this statement has been fully confirmed. From the time his labors for the Station ceased he has worked with untiring zeal to systematize and build up his department, besides giving numerous lectures before the Natural History Society. With the students the Doctor is very popular. Long may he live at Aggie.

WHEN, a few mornins ago, it was told us in chapel that the location of our new building was to be left until the alumni could have a voice in the matter at Commencement, there was a general surprise at the great diversity of situations mentioned heretofore. When the sixth place, the slope south of the flag-pole, was named, the general applause plainly demonstrated that this was the desired location by the students in general. It is a very commanding spot, interfering not in the least with the campus and room needed for sports in general, easy of access and obstructing but a slight portion of the view from the college buildings. It is earnestly hoped that this will be the chosen spot, and that the alumni will co-work with the students in giving us as attractive a location as possible, and not allow our new structure to be placed in obscurity.

WE are again called on to congratulate the college. The State's generous gift of $36,000 makes possible more improvements than we had dared hope for. About $6,000 will be expended in repairing North College and other buildings. Among the improvements contemplated is the changing of the Commandant's room together with the library into a larger room for the Christian Union. This Society has grown largely during the last year, and more ample accommodations for class prayer-meetings and Bible classes are very necessary. A bath-room is a great desideratum in college. It is earnestly hoped that the basement of North college will be fitted up for this purpose. The president expects to make his new house more than a home for himself. In this new building the Freshman will receive his warmest welcome, and from it the Senior will carry away some of the pleasantest recollections.

On May 27 a party of Essex County excursionists, under the auspices of the Essex Agricultural Society, made the college one of their stopping places on their excursion, which extended as far as North Adams.

After disembarking at the depot, and a short visit to the President's new house, where a beautiful view of the farm was obtained, they were furnished with a sumptuous repast by Mr. Bacon, to which they did ample justice.

After dinner the assembly met in the chapel, where a number of interesting and spicy speeches were made. The experiment station and college buildings were thoroughly inspected, and the drills watched with great interest.

This society not only retain their old ancestral excellence, by being "The Flower of Essex County," and "not afraid to speak with the enemy at the gates," but they represent the best agricultural society of the state. They have always shown a great interest in the welfare of the college, as seen by their sending students here and by their having among them one who made the most influential speech before one of the state committee hearings on the "College Appropriation Bill."

We hope others will follow their example and see for themselves the merits of the institution, and become thoroughly acquainted with its workings. No one whether farmer or not will oppose the college after he has once learned the value of the scientific as well as literary knowledge here obtained. We would take occasion to thank the Essexites for their timely example, and ask them to come again, when they will have a better opportunity to see the products of the farm, and not think everything is all "sorrel."

The first complete year's work of the Experiment Station has been finished but even this has been partially a year of preparation. During this time the work of the Station outside of the usual business of such institutions, has been confined to a few investigations such as have been suggested by the wants of the farming community. As its means allow these works will be continued and new ones inaugurated. While waiting for the results of these inquiries the Station has to depend for matter for publication upon work sent in which is of interest to the farmers.

Work in the laboratory has gone on uninterrupted throughout the year, though suffering considerably from crowded quarters and lack of apparatus which is necessary for such work. It is expected that by another year the accommodations will be far better and that there will be sufficient funds at its command to carry out properly the large amount of work which is necessarily performed by the Chemical department.

The Field and Feeding department has suffered still more from the small amount of money at hand although several experiments have been completed or are under way at present. Dr. Miles' services could not be retained by the Board of Control after his year had expired as the money was needed in other directions, and that department is now carried on by Mr. Wentzell under the superintendence of the Director.

What the Station seems to need most, second only to money, the necessity of which meets it at every turn, is a closer connection with the farmers for whom it was instituted, the greater portion of whom seem ignorant of its existence even, and this is certainly not as it should be. That other similar institutions are more fully appreciated is shown by the list of recipients of the publications of the New Jersey Station which contains more than 5000 names and is constantly increasing. That state has this year increased their annual appropriation to $11,000, and it is not reasonable that such a state as Massachusetts should be satisfied with an appropriation of $5,000 which is barely sufficient to keep such an institution moving.

The bulletin of the Station appears regularly every month and as they are mailed to all upon simple application there is no reason why they should not be widely circulated and become a source of profit to all interested. The annual report has been somewhat tardy in its appearance, but this is owing to the slowness of the Legislature and from no fault of the Station.

The Station has endeavored to the extent of its limited means to prove itself worthy of the state it represents; is it not proper then that the next Legislature should place it on a level with other State Experiment Stations by a liberal appropriation?

It is not intended by the best friends of the

Station that there should be too intimate relations with the college, but that there should be a separate management. Of course it can be of great aid to the college, but by too close a union the Station's interests can only be impaired, it being the smaller institution.

THE CHARACTER OF PORTIA.

"This poor rude world hath not her fellow."

Shakespeare must have been a prophet, for in Portia he has anticipated the woman of the nineteenth century,—her intellect, great reasoning powers, intimate knowledge of the obscure recesses of the human heart, imagination, humor and quick perceptions. The woman who so skillfully manages the affairs of the world hitherto monopolized by man, yet still a lady, gentle, courteous, kind and sweet voiced, unpretending, possessing a comprehension, understanding and brilliant imaginative powers, witty yet tender and finally having a profound insight into character. We may easily collect the history of her life drawn distinctly through the play. Of an old and noble race, gifted, the very dream of loveliness, an artist, skilled in the working of tapestry and exquisite embroidery, a rare musician, learned in the sciences and well read in law, her education was an exception to the limitation of the so-called "woman's sphere." as if woman could not excel in medicine, law or divinity when she finds a means of expressing her powers. Inspiration combined with strength is the key-note of her character, singularly poetic and simple but above all strong. The artistic temperament combined with practical wisdom. So delightfully modest, she does not pretend to know anything but always judges rightly, and here we may say that woman's judgment is almost always wise.

Their governments have always been successful and brilliant. They draw around and inspire the most sensible of their time. When woman's education has fitted her for exercising her capacities how largely she contributes to art, science and literature.

Witness the wonderful mathematical powers of Mary Somerville and Caroline Herschel whose demonstrations learned men could not always follow.

What an atmosphere of romance surrounded Belmont. The beautiful palace, the lovely and varied influences of the sea. We seem to see the pale green canals and the waves tossing themselves into the blue sky in wreaths of spray, the golden dome of St. Marks and the stately towers and columns bathed in the purple twilight while the chimes from the belfries pour out their melody o'er the ocean. Again the courteous Bassanio crosses the Rialto with his friend Antonio. Again they meet the subtle Shylock, and at the mention of his name a host of men of influence and power of his race arise before us. Portia, with emeralds gleaming in her hair, leans o'er the balcony in the moonlight waving a fan of peacock feathers in farewell to the disappointed suitors, the dark Prince of Morocco and pompous Prince of Aragon with their glittering retinues.

Bassanio accompanied by Portia and Nerissa entering the mysterious chamber where the casket lay in state, and the curtain that concealed them is drawn away to the sound of soft melancholy music, the happiness of his choice, the elopement of a "most beautiful pagan, a most sweet Jew" with Lorenzo, the trial scene, the discomfiture of Shylock and the triumph of the young doctor of laws, in which Portia by her brilliant and eloquent speech full of progressive ideas, which had frightened some of the weak minded gallants, who had approached her, showed that she was not too sentimental to deal with the hard facts of the situation, and that she was, as woman is, the co-mate and not the mere help-mate of man.

ON AN ANCIENT SKULL.

Fain would I know thee!
Low browed, fierce jawed.
Wert thou of the Neolithic or stone age men?
Or didst thou dwell with the Eustrariau race
Amid Asturia's mountains?
Gone thy lingual organ!
Didst thou ere eat the docile clam?
Or hard boiled eggs at night with 'alf-and-'alf?
Along with the Welch arc-bit and the modest quail?
Perhaps thou wert a Celt
Alas the ideal absolute for them has yet no charm,
Nor the explanation of the cosmos by the logos,
The Boetian hod and the philosophical
Black clay-pipe is yet their Nirvana.
Were thy tones low, subdued and sad?
Or didst thou delight in harsh, loud

Laughter and blatant sounds, discordant
Elements and consonants dynamic?
Thou hast a quasi-sarcastic look,
Revealing ignorance of empirical
Psychology and the relativity
Of the super-Cadmean alphabet
To the metaphysics of Spencer.
Alas! thy lachrymatory vials once full
Of Saturnine fluid now are dry,
Cracked thy cerebrum and cerebellum,
Gone the forms, figures, shapes, objects,
Ideas, apprehensions, motions and revolutions,
The same now if with wine and wassail
Thou didst fume, or didst hold
Communion with Pythagoras and
The egregious mystics.

THE W. I. EXHIBITION IN ORATORY.

Among the famous of the world the orator has always held an important place. Even in ancient times, when military valor was so highly esteemed and great achievements in this direction were more frequently performed, the orator seems to have held as important a position as the renowned Captain or General.

The works of Caesar and Cicero come down to us together. The one was a General whose legions, guided by the skillful hand of their leader, worked prodigies of valor; the other rises before us as an orator, standing up in the dignity of a Roman Consul and giving utterance to those scathing accusations the effect of which was to rid the state of an evil whose size and power few could fitly estimate. As we compare these two men,—Caesar, grasping a weapon from a common soldier and by his bravery inciting his dispairing troops to new effort—and Cicero, by his words rousing his countrymen to rid themselves of a conspiracy whose growth threatened the very life of the Republic,—who shall say the services of the latter were of less importance than those of the former?

In modern times however the arbitration of war is less frequently resorted to than of old, and in proportion as the importance of the sword decreases, the power of oratory is augmented.

In modern education oratory receives considerable attention. If, however, we look at the daily use to which the power of speaking may be put, the times when to express ourselves clearly and impressively is of the utmost importance,—we may ask if this branch of culture should not receive more attention than is now paid to it.

In most of our colleges this subject receives some attention, but without the hearty coöperation of all concerned, it cannot reach its greatest perfection. Our own curriculum, although affording as much training in this direction as the average student desires, yet there have been some who, having a desire for further practice in the art of clear and forcible expression, have founded a society whose object shall be culture in this special direction.

The Washington Irving Society of the Massachusetts Agricultural College was founded in 1868. Since its foundation the interest in it has remained steadfast and to-day many a man in reviewing his college days will remember with great satisfaction the hours spent, and the valuable help in speaking received, in this Society. "A more awkward speaker than you, on your first night in W. I., I never saw, nor a case of more rapid improvement," said a recent graduate lately to one still in college. And he of whom this was spoken attributed to a great degree his facility in speaking to the valuable lessons obtained in this flourishing society.

During the present college year there originated the idea of the members giving an exhibition of oratory, and thus established a precedent which it is hoped may hereafter be followed, as such things give tone to college sentiment.

This exhibition was given on the twenty-seventh of March. The chapel hall was appropriately decorated with flags and evergreens. The exercises consisted of speaking by members of the society and music by the "Aggie" quintette consisting of Messrs. Mackintosh, Brooks, Wheeler, Barber and White.

The printed program which was very neatly gotten up was as follows:

PROGRAM.

Music.

Fra Diavolo.

The Brides of Enderby, *Jean Ingelow.*
Lewis Calvert Leary, '85.

An Arctic Aurora, *Kennan.*
George Waterbury Wheeler, '86.

John Quincy Adams, *Holmes.*
Winfield Ayres, '86.

Music.

Spanish Guitar.

Death of Enoch Arden, *Tennyson.*
Kingsbury Sanborn, '86.

The Wreck of the Hesperus, *Longfellow.*
Arno Lewis Kinney, '86.

Oration Against Verres, *Cicero.*
John Joseph Shaughnessy, '87.

Music.

Sailing Knight.

The speaking as a whole was very creditable to the participants and society. The music was vigorously encored after each selection and was very acceptable.

If any criticism were to be made it would be that a body of singers of ability as pronounced as that of our quintette should be more fully prepared to respond to an encore if such occur, in order that everything may go smoothly. Such exhibitions are to be encouraged as giving pleasure and profit to all.

FACES.

"Your face is as a book where men may read strange matters."

We probably overrate the beauty which is in form and color. The absence of the graces and perfections of the mind is ill supplied by mere personal charms. Some of the most noted characters in history are noted for their homely faces. Socrates was said to have been the ugliest of the Greeks. The author of that charming idyl the Vicar of Wakefield had wan features and a vulgar appearance.

"The fiery spirit working out its way
Fretted the puny body to decay."

Two of the most charming women in French history Madame de Stael and Madame de Sévigné were noted for their homeliness yet they were social queens. They had such an intense personality that it was impossible to resist being influenced by their feelings and affections. We may find the secret of this in Madame de Sèvigné own words "Work every day at the mind, heart, soul, and sentiments." If there is anything which at the same time excites our respect and love it is noble old age. The features may be homely, but the life of benevolence and purity must have painted itself on the face; a beautiful legend is told of the old painters that the eyes of the 'Mater Dolorosa' grow large and full of longings, because of her inner love, and we read that the love of Christ moulded His features until even Pilate could but admire him. What a charm some faces exercise upon the imagination. The almost divine features of Raffaelle, the tender beauty of Beatrice Cenci, the inspired face of Liszt,—all are redolent of ideality and haunt the memory like half forgotten dreams.

Some faces are as keys to that secret place, the human heart. Traces of the journey from the spring-time to the Indian summer of life are plainly shown.

How exquisite is the face of Jean Ingelow, the effects of the tumult of the outer world are seen but faintly, her mind is busied in a calmer sphere and the lovely tenderness of her heart gives that transparent grace to her features which those possess only who dwell on the highest thoughts of which humanity is capable.

As a thousand tints of color compose the common light, so also the impression of the innumerable thoughts and feelings expressed through that wonderful medium, the human face, is retained to attract or repel.

ILLUSION.

O'er the rippling waters reddening in the west,
Comes the voice of my own love, of her I love the best.
The white sails of the fishers, far out upon the sea,
Seem laden with the faint, sweet melody.

Then why this dread that will not leave me,
Still clinging to my heart the more,
As in my tender, eager longing,
I dream of happy days of yore.

Now are shadows falling on the ocean's breast,
Now the darkness cometh, the sun has gone to rest.
Yet I see not my own one draw near the harbor bar,
I do not hear her sweet voice make music from afar.

* * * * * * *

The white barque in the darkness draweth near the shore,
Yet the voice of the dear one is silent evermore,
They bear her sadly, gently amid the falling dew,
To rest in the church yard amid the murmuring yew.

JUNIUS BUGG.

Ye who listen with serenity to the whispers of mosquitoes, and pursue with eagerness the festive moth-miller; who expect that age will perform the

promises of youth, and that the deficiencies of the window-screens will be supplied by the forbearance of insects; attend to the history of Junius Bugg, prince of Terrifiers.

Junius was the forty-seventh son of old Daddy Bugg, but was possessed of all the latent talent for mischief of a first-born. At a tender age he became the victim of the corroding canker of discontent though surrounded by all the luxuries of a well-kept lawn and a numerous company of youthful Buggs and Buggesses.

"What," said he, "makes the difference between the Buggs and all the rest of insect creation? Every grub that grubbeth beside me has the same corporeal necessities with myself; I am hungry like them, but when hunger is appeased I am not, like them, at rest. The Buggs surely have some latent sense for which this place affords no gratification, or they have some desires distinct from sense which must be satisfied before they can be happy."

After this he lifted up his anterior end, and seizing a delicate rootlet, forgot the intensity of his soul-yearning in the sensual delight of getting a square meal.

On the next day the old angle-worm who had been his instructor in Geometry and Ethics, having made a thorough and exhaustive diagnosis of his disease of mind, was in hope of curing it by counsel, and officiously sought an opportunity of conference; but young Junius didn't catch on. Finally, however, being unwilling to offend a worm whom he had once reverenced and still loved, he invited him to set down on his stomach with him, under the shade of a dandelion root. After much unproductive chinning, the old angle found himself slightly off his base, but was unwilling to remain silent.

"Sir," said he, "if you had seen the miseries of the upper world you would know how to value your present state."

"Now," said Junius, "you have given me something to desire; I shall long to have a hand in this little game of misery, since that is necessary to happiness."

The old worm crawled off with the impression that he had put his foot in it (though he had not been aware that he possessed such a thing) since his reasonings had produced the only conclusion which they were intended to prevent.

But Junius was so elated with having found an object in life that his companions suspected him of having drawn a lottery prize.

The instructor, in his disappointment, threw himself in the way of the small boy with a bent pin, and died a lingering death in the fish-pond that never knew fish. Not so young Junius Bugg, the prey of unfulfilled desire. He took off his new frame of mind long enough to enjoy another square meal, and then bent all his energies upon the means of escaping from the sod.

In nosing about among the roots and stones, he came one day upon an orthopterous young fellow busily engaged in growing himself a pair of wings.

Pleased by the notice taken of him by his coleopterous contemporary, the Grasshopper felt encouraged to air his superior knowledge.

"Sir," said he, "you have seen but a small part of what the mechanical sciences can perform. I have been long of opinion that instead of the tardy conveyance of legs and articulations, insects might use the swifter migration of wings; that the fields of air—"

"Yes," interrupted Junius, "but it is merely a matter or a pinion, you know any way."

But it only rekindled young Bugg's desire of penetrating the sod. Having seen what the G. Hopper had already performed, he determined to do more. It was many days before his apparatus was completed, for he constructed not only a light pair of wings for flying, but also a heavy ulster to protect the delicate parts and keep the dust out of the improved ball-bearings and jeweled holes.

As the time for the trial and departure arrived he became so excited that he forgot to settle the wash-bill and return the oil-can he had borrowed from his friend Hopper; but when an ardent soul begins to soar, why should it be troubled with such sordid things as debts?

It was a balmy day in the month of roses when Junius emerged through the crevice he had found at the edge of a walk. He climbed to the summit of a lofty plantain leaf, waved his pinions awhile to gather air, then leaped from his stand, and in an instant dropped into a very bad habit of buzzing, from which he was never able to break entirely away.

Now Junius was possessed of an indomitable will

and an if-you-dont-see-what-you-want-why-ask-for-it disposition. Indeed, not finding the object of his desire, he would not stop short of making it. And so, being in search of misery, he organized a stock company and began the manufacture of a very superior article.

This Bugg desired a little assemblage of timid maidens in which he might administer terror in his own person and see all the frantic efforts to escape with his own eyes; but he could never fix the limits of his persecutions, and was always adding to the number of his victims. Not content with buzzing into eyes and putting out ears, and exploring the intricacies of bang and twist, he needs must interview the lamp by which the weary student was cramming for his finals.

In an instant our Bugg, on mischief bent, was collared and thrust into a small-necked bottle where he found twenty-seven other dudes of his tribe, and misery enough to satisfy his most earnest desire.

And here we will leave him—since we can't get him out—a warning to Terrors and white folks generally.

THE OLD RED SCHOOL-HOUSE.

How often when riding out with an aged citizen he will point out to you a spot, now covered with brush and bramble and exclaim, "Full well do I remember the time when the old red school-house stood there;" and on how many New England hillsides may be found the broken door-steps and fallen chimneys which mark the spot where once the district school flourished.

Time in his flight has utterly destroyed many, and left scarcely a vestige of others. A few still stand among our hills and mountains, yet they are robbed of the halo of birch twigs surrounding those on which we look back into "ye olden times."

The methods by which the young idea is taught to shoot is much milder now than when our ancestors trembled beneath the despotic rule of the school-master who carried a birchen rod as a scepter, except when its place was taken by the ferule or ruler, which not a few students of to-day hold in sad remembrance.

An instance is known to us where with a shingle, the instructor endeavored to bring the unruly one under submission as a mother would her fond child; but the nimbleness of the boy proved too much for the shingle wielder, for he went around his ruling lord like the water-wheel of a steamer around its axis; but the paddling of the latter seemed to have the greater effect, as its motive force was subject to less interference, and was of a steadier nature.

But the old school-master is a thing of the past; the districts are gone, and the present generation cannot learn its A B C of politics as the former ones have at the "school-meeting," held at least every Spring, to provide officers and other necessities of the year. There was wire-pulling at these times. It would perhaps become known that one man, if elected as "prudential committee" would obtain if possible a certain teacher, to whom others would object, there might be several candidates for the office, and then the voting would be as exciting, on a small scale, as ever a presidential election was, even estranging old friends. The north side of a district would often push forward a candidate for clerkship against the south, and then would be stirring times.

The rights of furnishing wood and of boarding the tutor were auctioned off to the lowest bidder, the bids often running very low, so eager would the worthy burghers be to have something to do with the education of their children. Before this method of supplying the inner wants of the teacher was in vogue, he or she was accustomed to board 'round, remaining perhaps a week with every householder of the district. All that need be said of this method is, that many and varied experiences must have been gained by the teacher in this time-honored but obsolete custom.

The origin of the district system of schools where the towns are subdivided into parts sufficiently small as to require no scholar to travel more than three miles, was probably in early Colonial times when every community of fifty dwellings was expected to maintain a school and make all provisions for the same. Thus the early education of New England children has been managed, until a few years ago, by an act of the Legislature of Massachusetts, the towns were required to take charge of the schools. Though in other states the change may not have been the same, there is no doubt that this old style of instruction has seen its day. The master will no longer brandish the birch persuader, nor be forci-

bly ejected by the big boys, which latter operation was often performed in winter when the larger boys were present, many of them men grown, in years at least. The "firing-out" of the school-master was the crowning event of the season, but when unsuccessful in the attempt it often culminated in a general clearing out of the participants.

Taught in this way, with inferior instructors, and at best short intervals at that; yet how many have passed onward to success through the old red schoolhouse. Perhaps all New England's great men of the past two centuries, owe their first knowledge to it, while many others in humbler walks of life have pleasant memories of these places of learning.

All honor to the old school-master and to the hall where he reigned supreme, and when we look back from our high pressure methods of instruction may they seem, as doubtless they were, the best of their time.

'85 CLASS TREE.

May 9th has been made quite memorable in the annals of '85. That day was chosen for the planting of the class tree. In the early morn Messrs. Flint, Phelps, Barber and Howell, set out for that sylvan city, Pelham, and from thence brought a beautiful elm. Meanwhile, the rest of the class selected the site and dug the hole. The sod was broken by President Greenough. About 7 P. M. the various members gathered round the spot, which is in close proximity to the site of the new chapel. After the planting of the tree, under which a glass vessel was placed containing the records of the class, and an '85 *Index*, the orator of the day, Mr. Barber, addressed the assembly.

CLASSMATES:—In accordance with the custom established by our predecessors, we have this afternoon installed as a regular member in the association of class trees, this magnificent elm. We have taken it from the kind and fostering care of its home in the forest, taken it from its native soil and placed it in a strange land and among strangers, to stand alone and unprotected against the full cold blasts of winter and the droughts of summer. Situated here on the site of our new chapel it will ever be regarded with pleasure on account of the associations connected with the class. Future classes will question its history, and after learning the "why and wherefore" will shape their course accordingly; and yet it is doubtful as to whether some of our class exploits would serve as an example, illustrative of the golden rule. Still it is safe to say that our intentions were always good.

Classmates, what a place for meditation. It is as though we were standing by the grave of some beloved friend, the question forces itself upon us, how soon must we be placed in a similar position? How soon ere we shall be cast into the world's wide arena? Our college days are almost numbered, we are about to take the last step in our course of instruction here. One year from now and we shall have completed the first act in life's great drama, the curtain will fall, we hope but to rise again, revealing to the gaze of the wondering world a band of active and energetic workers bound to do credit to themselves, their class, and college. Classmates, this tree is in our charge, let us give it our care and attention, so that in future years the magnificence and beauty of its foliage shall cast a reflection of honor on the class of '85.

The class ode by L. C. Leary was then sung by a quartette.

ODE.

Air—Watch on the Rhine.

Our golden youth is fleeting fast,
And summer hours depart;
Keen blood runs swift and strong and free,
And full of hope beats ev ry heart.
'Mid breath of May in whispering breeze,
'Mid fields abloom, 'mid tender leaves,
We stand together hand in hand,
We stand together hand in hand.

The sky is now a brighter blue
The sun of redder ray,
The hills and meadows, vales and woods
Invite us quickly on to stray.
All nature speaks with blossoms fair,
The sunshine gleaming through the air
Filling all with tender light divine,
Filling all with tender light divine.

Then let's away with spirits gay
Seek fields of golde grain,
Being noble, simple, kind and true
To endure whatever fate ordain.
In this fair morning of the year,
Ring out in voices loud and clear,
What e'er betide, where'er we go
We'll love and not forget.
Whate'er betide where'er we go
We'll love and not forget.

About 10 P. M. all adjourned to Frank Wood's, where the following banquet was served:

POTAGE.

Mock Turtle, Puree a la Reine.

POISSON.

Boiled Salmon, Maiter d' Hotel.

GAME

Quail on Toast aux Champignon.

VEGETABLES.

Fried Potatoes, a la Parisienne.

RELISHES.

Lettuce, Olives, Chow Chow.

PASTRY.

Angel Cake, White Mountain Cake, Lemon Cake.

DESSERT.

Vanilla Ice Cream, Lemonade, Oranges, Bananas, Raisins, Nuts.

Tea. Coffee.

Two very pleasant hours were passed, for interspersed between the various courses, toasts, speeches and songs were the order of the evening. Mr. Browne gracefully presided as toast master. Toasts to the ladies, the Lieut., Prex., The Hash House, and '85, were responded to with vivacity. Mr. Brooks was chorister of the evening and led in a large number of the familiar old songs. A solo by Mr. Tekerian was a feature of the evening. A truly jolly time was passed by every one present.

'85.

Where'er we go we'll speak her name,
Enroll it in the book of fame.

THE NEW ENGLAND TRANSCENDENTALISTS.

There has always been a tendency among poets and men of letters to live near each other. The Schools of Greek philosophy occur to the mind at once. The mystics and schoolmen of the middle ages gathering around the romantic Abelard, Girardino, Bruno and the early Italian poets rally in the same way as did Addison, Pope, Johnson, Steele and the wits of Queen Anne's time. Then there are the Lake poets of England, Wordsworth, Coleridge and the rest; also the circle which Karl August gathered around him at Weimar, of Goethe, Schiller, Wieland, Jean Paul, and here we have had that circle of idealists in Concord—Channing, Emerson, Theodore Parker, Alcott, Hawthorne, Margaret Fuller and Thoreau. In all these schools a common impulse has led to the formation of that strictest bond, the friendship of united inspirations. Concord with its broad meadows and sluggish river has no architectural beauty. The memory of its departed worthies who once walked its streets is now its chief glory. Emerson describes it:—"Beneath low hills, in a broad interval, through which at will our gentle Indian rivulet winds," and Channing says:—"The river calmly flows through shining banks, through lonely glens." Here was the "Old Manse" of Hawthorne. There the cottage of Channing. By the side of the "blue-eyed Walden, that doth smile most tenderly on its neighbor pines," was the hermitage of Thoreau; near the edge of the village, close to the wild-flowers and woodlands was the study of Emerson, and on the hillside near by Alcott is still leading his ideal life. They are intense lovers of nature; the hills and waters, as well as what Milton calls "the still air of delightful studies" are sources of inspiration to them. It is said of Emerson that, "his thoughts have a place upon the library's chaste shelves, where man of various wisdom rarely delves." He touches every topic with grave beauty. His works are studies abounding in strong sense and happy humor, fresh with the breath of progress. There is nothing of the spirit of proselyting but a delightful deference to our free sense and opinion. Their adventure at "Brook Farm" undertaken in the hope of enjoying a pastoral life with the sentiment of the olden time blended the homely air of our New England life with the strange romance of Mediæval time. Here Channing the poet, and Ripley the man of letters, dug ditches, standing shoe-deep in mud, and conversing meanwhile upon the highest themes of German philosophy. Dana and Parker cleaned pig-pens and forked manure, their spirits soaring in the seventh heaven. Emerson milked the cows, while Hawthorne in his journal speaks of patting them gently with a shovel. The contrast between the nature of their employment and the character of their thoughts is certainly ludicrous. Margaret Fuller, who was said to be the most learned woman of her time, scoured the dishes and baked the ambrosial bread eaten in this paradise. She enchanted all the other dreamers with the splendor of her own dreams, and like Pythagoras was revered by the multitude as one under the influence of divine inspiration. As in most human

institutions there is an element of decay, so this philosophical air-castle crumbled, so they fell apart, some returning to the established ways of life, but the majority through a combination of circumstances made Concord their home. From thence their thoughts going out into the world have affected thinkers, swayed politicians, guided moralists, inspired philanthropists, and created reformers. They have left a broad and deep trace upon ideas and institutions. They have given its characteristic feature to American literature. A peculiar fragrance is emitted from their writings, as fresh as the wild water-lillies which bloom amid the hazy Concord hills. One of the greatest of European scholars has said that they are the Americans sure of being remembered hundreds of years hence. The halos around the brows of authors tarnish with time; "Stars vanish without number, sleepy planets set and slumber." Independent of their opinions, their high morality and beautiful sentiment, as well as graceful diction have had a marked influence upon cultivated circles everywhere. Their works have been translated into Persian, into German and Italian. Among the Cardinals at Rome, Channing's Ethics are placed beside the sermons of Chrysostom and the works of the fathers. Margaret Fuller's book, Woman in the Nineteenth Century, has a world-wide reputation. Her remarkable acquirements (she read almost every book in almost every language), her high moral courage in anti-slavery times, places her among the most illustrious women of America. In conversation like a De Stael or Sévigné, one seldom met with thoughts like hers. Nature, poetry, art, life, were her themes. She was one of the few persons who look upon life as an art and every person as a worker of art. Thoreau was one of those whom Plutarch would have liked to have made immortal in his pages. He was a pure son of Nature. His experience as a hermit at Walden Pond, and in that prose idyl, A Week on the Concord and Merrimac Rivers, are remarkably fresh and full of life. Dropping society clean out of his theories, he believed that one of the arts of life was to make the most of it. His religion was of the most primitive type, inclusive of all natural creatures even to the "sparrow that falls to the ground." The commonest topics treated by his wondrous imagination became masterful creations. His familiarity with literature is shown by one of essays, which has quotations from over one hundred authors, including Sanscrit, Greek, Latin, Italian, German, French and Persian. Each is a representative of his kind: Emerson is the seer, Alcott the mystic, Margaret Fuller the critic, and Parker the preacher. Perhaps the purity and beauty of their characters is due to the hours spent in woods and fields, in the haunts of the arbutus and Rhodora, the climbing fern and the rock-loving columbine. Their daily actions throw an ideal charm around the most prosaic doings; the great secret of their philosophy is living humbly and hoping nobly. In conversation quiet and retiring, in opinion earnest and hopeful, in true and unaffected patriotism, they are citizens of the world. Alcott is the only one now living, the rest now realize the dream of their earthly lives.

"They are not idle; in that higher sphere
Their spirits bend themselves to loving tasks,
And strength to perfect what they dreamed of here,
Is all the crown and glory that they ask"

A CLASS EXCURSION.

For some time '87 had been bent on a "day off," so finally, through Prof. Maynard's influence, May 16 was decided on. Alas! when the morning dawned, with it came a rain-storm, and in spite of all their efforts they were compelled to remain at "Aggie" at the mercy of the Professors.

This disappointment did not seem, however, to lessen their interest in the proposed expedition, but on Thursday, May 22, an extremely warm and pleasant day, rather earlier in the morning than usual, things seemed to be stirring which told us all that '87 was preparing for the long expected and much awaited excursion to Mt. Holyoke.

At seven, to hash they went; but the thought of the day seemed to weigh upon them, as the usual lingering around the "festive board" did not occur, and at half-past seven the teams appeared, and in a short time their departure was announced by the mingled notes of cornet and fish-horn.

The route lay directly through the center of the town to the Notch, and otherwise than the trials of speed and scaring the natives with hideous yells and hootings, it was passed without adventure. All expecting a roll-call at the Notch, assembled

there, when instead of each one's exerting himself in answering "Here," Prof. M. stood a treat to oranges. Of course the dignity of all prevented the acceptance of this kind offer!

The party was then divided into squads, part going to the "Garden of Eden," but failing to find "Eve;" while others crawled to the top of the Mount through the renowned "Devil's Garden," which they found surely worthy of its name. It is certainly one of the few places where a farmer would starve to death in following out his profession. They were, however, repaid for their exertions when they reached the summit, for there they met a refreshing breeze, and a view of which all lovers of nature should surely avail themselves Before and behind them lay the renowned Connecticut Valley, while to the right and left rose the Berkshire Hills, presenting a background worthy of the pencil of the most skilled artist. After enjoying these delicacies as long as their inclination seemed to warrant, a few took a short cut for the carriages, but soon saw they had the rougher side of the bargain, for they found the way to be over fallen trees, stumps, rocks, down precipitous cliffs, and in short the roughest place imaginable. The carriages were at length reached, and feeling rather thirsty a few of the company started in search of water, which they found after a mile's tramp. When they returned they rendered such glowing accounts of their "swimming" adventure, that several more, anxious for a paddle, hastened to the spot. But, alas! when they reached the spot their hopes were blighted, for instead of a swimming-hole they found but a "nutshell of water;" and afterwards their desire of swimming was held in check until a more favorable time.

Dinner was then served to man and beast, after which the party set out, each for himself, to find the way to "Aggie." Road after road was mistaken, and some seemed to find great difficulty in getting out of their tangle, some going as far as "Hotel Brunswick, (in Boston, of course); others were much provoked by having the natives inquire of them when they sought information in regard to the route: "Are you West Point Cadets?" Their answer could only be: "We are at present pointed to the West, and wish you would be kind enough to point us to "Aggie."

The excursion is spoken of by the participants as a very pleasant and successful one. And though they wandered for many a mile o'er cliff and dell, the dawn of day welcomed home the last of the wanderers.

COLLEGE ATHLETICS.

The beneficial results which a student obtains from athletic sports certainly cannot be questioned. They give the student a wider field to act in, by giving opportunities for physical development; as courage, resolution, perseverance, faculty of organization, executive power, etc., which are as essential to true success in life as ripe scholarship. Not only are they of importance in this light, but they serve as a means of protecting the good order of the college.

We are sorry to note that the general athletic system here is not what it should be. No gymnasium, or at least, what is left is in no condition whatever for service; but had we the proper apparatus, etc., we have fellows enough in this college who would make first-class athletes. "Aggie" has won laurels in the past, and why can't she now? She can't, or rather she does not try, simply because she has nothing to awaken the necessary interest among the students. But this is referred to elsewhere in this issue, and I will only detain the readers by giving them a short résumé of this year's work in this line. But I would like to add that until the proper requisites are provided for the maintenance and carrying out of this work, no one must complain of any low standing "Aggie" will have to take among the inter-collegiate contests. When they are procured, less of the animal nature will prevail here and a good healthy topic for conversation out of study-hours will be furnished. Not only that, but the alumni will feel a warmer interest in their Alma Mater, and the students will no longer be "home-keeping youths," "with homely wits," but will measure themselves by other standards than those found within the limits of their own campus.

BASE-BALL.

'87 started in finely this spring to show what stuff was in the class for this, the national game. But after setting a good example, a mass meeting was called and she promptly and nobly turned her sup-

port for the "Aggie" team. Upon the examination of this team's regalia, it was found that it was in no condition for use; so a goodly sum was raised, and new uniforms bought. Since then three matches have taken place, and of the three the team has won two. Some good playing has been shown on our side, and to those of the college who have acted as spectators, it has seemed that by judicious management we can put a "bang up" team in the field next spring.

The next sport which presents itself is

FOOT-BALL.

This much liked game has not made its appearance this spring, but last fall considerable interest was taken in it, and some excellent playing shown. But for some cause or other only three matches were played. This game, as well as base-ball, it is thought can be brought up, and we hope that next fall some good work may be done.

LAWN TENNIS

has been the ideal this spring, and a marked improvement among the players has been shown. Four courts can be seen on the grounds, and although they are not extra in quality, still they have been the scenes of some interesting games and brilliant plays.

On the whole the athletics of "Aggie" have been all that could have been expected with the present surroundings, and we sincerely hope that the Faculty and alumni will take measures to provide for their future welfare.

NATURE AND CHAUCER.

No poet loved nature more than Chaucer. A scholar's mind, filled with gorgeous imagery, familiar with gallant knights and lordly manners, he had still the simple, child-like love of field and forest and although gifted with the highest poetic vision, richness of imagination and extraordinary delineation of character, he could still dwell tenderly upon the plain sounds and sights of earth, ever singing of them with the clearness and sweetness of a child. He delights in the outer world of forms and objects, the homely scenes of England, the green lanes of Surrey and Kent, the meadows and fields as well as "castle walls and golden summits old in story." Rural England has never since found a truer poet or one who had before his mind the scene and spirit uncolored by any intervention of his own thought or sentiment.

His favorite season is the May-time. Of this he is never tired of singing. Reading him, we feel the warm sunshine, the west wind blowing and the murmur of new leaves. The ever-changing aspects of the outer world are rendered with the most loving fidelity, the wild flowers by the wayside, the tender lights in the sky, the soft green grass, the notes of song-birds, all are treated with the careless ease of one to whom they were the most familiar things. All through his works not only is the impression of each character deeply graven in the memory, but the season and the scenery which encompassed them. The poets whom men really love are distinguished from the rest by the art of ennobling common things. They reveal the relation which exists between nature and the soul of man, proving the old saying that no man can be a great poet who is not a great philosopher. Thus poets are teachers who make us observe more closely and keenly the wonders around us, ever bringing home some new truth and noble contemplation from cloud, mountain, woody crag or sea.

The Greeks, although they of all people were endowed with the keenest susceptibility to beauty, still always used nature as a background to the picture of human life. Homer nowhere paints scenery for its own sake. That simple, spontaneous pleasure which all unsophisticated beings feel in the various aspects of nature is not found in Greek poetry. Chaucer, of all poets, was the first to revel in the forest, meadow, the river side, the warble of birds and the fragrance of wild blossoms. In the "Black Knight" he says:—

> Into the woods to hear the birde's song,
> When that the misty vapour was agone,
> And clear and fair was the morning.

Everyone remembers his great love for the daisy.

> When comes in the May,
> There dawneth no day,
> That n' am not up and walking in the mead,
> To see this flower against the summer spread,
> When it upriseth early in the morrow,
> That blissful sight softeneth all my sorrow.
> So glad am I that I have presence of it,
> To deem it all reverence,
> As she that is of all flowers the flower.

Then he describes himself kneeling down to greet the daisy when it first opens :—

And down on knees anon right I me sit,
And as I could this fresh flower I greete,
Upon the soft and sweet grass.

The marvelous truth and freshness of his morning pictures are wonderful.

When the trees were laden with leaves,
Some now very red and some a light glad green,
And when the sun looked ruddy.

How fresh and invigorating are his descriptions of spring showers !

Causing the ground fet times and oft to give many a wholesome air,
And every plain was yclothed fair
With newe green and maketh smalle flowers to spring here and there.

For such pictures as these Chaucer will always be read as the poet of nature, notwithstanding the difficulties of an antique style and obsolete spelling. For he shows how exquisite are the influences of nature on the mind and habits of the poet compared with those of the artificial world.

NIGHT ON THE FAULHORN.

AN ALPINE REMINISCENCE.

It was the first week in Sept. Sunday had been passed at Grindelwald, amid all the discomforts of a rainy day in a Summer hotel among the Swiss mountains. A day so dismal that the service in the cheerless little Calvanistic church thronged with its worshippers clad in somber brown homespun brought unusual relief, and a stroll, in the churchyard nestling close to the mountain side, and bearing its mournful record of the dangers midst which these people live, was inspiring rather than depressing. On many a headstone the single word, *Verungluckt* tells a tale no epitaph can embellish; speaks of storms, of avalanche, of unselfish bravery, and, alas! of untimely, sudden and violent death; of desolated hearths and broken hearts. Above towered the grim *Wetterhorn* to a height of more than 12,000 feet, weather-boding, storm-beaten, forbidding; its shroud of perpetual snow hidden, by the very density of the atmosphere. Through the rifts in the clouds of vapor, for the very clouds had sunk to the valley and were drifting and whirling about the mountain's base, showed the blue whiteness of the Grindelwald glaciers, and beyond stretched the sea of ice, the "*Eismeer*," from which flows the Lütschine through its self-hewn chasm in the gray rock. The snow and ice melted by the continuous rain, broke at intervals from the retaining grasp of the mountain, and came rushing, rumbling, roaring, thundering down to the valley, and pastor and congregation listen reverently and breathlessly for the last faint murmur from the distant *Jungfrau*, and only the pattering of the rain remains to remind of the ill-humor of the elements. Monday morning, contrary to expectation, dawned bright and clear; no trace of the storm remained save the freshness of all verdure, the great billows of gray vapor rolling up the mountain side, and the new snow glistening on every slope of the lower hills just creeping into the light of daybreak. Breakfast was soon over, and Fritz Böhren and I were climbing toward the sun-gilded heights towering thousands of feet above.

Fritz, you must know, was the guide, whose stout young shoulders hardly felt the weight of my eighteen-pound knapsack, and who felt confident that he could outclimb any wearer of "knickerbockers," in spite of the evidence of spike-shod shoes and well-tried alpenstock presented on the present occasion. Our path lay nearly due north, yet for some time followed the course of the Lütschine. The straggling village, with its low wooden houses and stone-weighted roofs, was soon passed, and the people just beginning their labor for the day were left behind, and erelong appeared mere pigmies crawling along the edge of a moving silver thread, while before and behind rose the green abrupt sides of the valley. The September sun beat down the mountain side with vengeful fervor, and soon every trace of yesterday's snow had vanished, except where protected by the shade of tree or rock. But as the forenoon wore away drifts of old snow began to appear and (ye shades of Delmonico and Frank Wood!) our alpine beverage was cooled with ice congealed while the world was young. Two hours more of constant climbing up a steep and rugged path devoid of shade, across innumerable alpine torrents often falling in most picturesque and beautiful cataracts into deep basins worn in rocky beds, sometimes descending from the very clouds themselves in a jet of solid silvery fluid,

dashing from cliff to cliff, shifted and whirled by the breeze, growing more and more vapory, less and less distinct, dancing in the sunlight till finally, only a rainbow remained, evidence of its existence.

Here 6,496 feet above sea level in the *Bachalp*, is the last human habitation we shall pass, for beyond rises the summit of the Faulhorn itself. Fritz had for some time been less cheerful and confident than during the morning, he had ceased from whistling his alpine airs, and was prone to lag behind and allow me to take the the lead, only offering suggestions concerning the course when importuned, yet would own to no fatigue. When the *Bachalp-See*, nestling on the mountain's side at an elevation of 7,428 feet was reached, the fatigue of the guide was too apparent to pass unnoticed, even after his own reiterated denial. A halt was called, and Fritz then acknowledged that the work of ascent and the change in temperature were beginning to tell on him. But after a slight rest he pronounced himself ready for the final struggle of the last 1300 feet. But labor bravely as he would he fell constantly behind, and a consultation was held. Time was precious, for the hotel on the summit of the Grosser Scheideck three hours away at an elevation greater than that of Mt. Washington, must be reached before night-fall, and a stay on the Faulhorn sufficient for rest, for admiring the unsurpassed view, and for the taking of scientific observations was necessary. It was agreed that I should push on as rapidly as possible while Fritz followed at his leisure. Soon I stood on the very topmost ledge nearly 9000 feeet in air, and the whole wonderful panorama burst into view. Directly below a sheer leap of 7000 feet lay the blue waters of the lake of Briery, while to the north and east extended the chain composed of lakes Uri, Luzern and Zug, and westward were reposing Thun and Morat, and away on the horizon where sky and water meet extends the blue circle of Neufchatel. Rising between the lakes and forming a snow-capped circle round our point of observation, tower the giants of the *Bernese Oberland*, the Wetterhorn, Schrekhorn, Finsterahorn, Viescherhörner, and Mönch. But above them all towers the glistening pinnacle of the Jungfrau, rearing its proud head 13,671 feet above sea level. Perceptions are but comparison, and here comparisons fail, and words cease to convey ideas. *Beautiful* does not suffice; there are more beautiful scenes in Switzerland than that from the Faulhorn, but its majesty and grandeur are unequalled. Lakes glittering like sapphires in malachite settings, amphitheatred mountains, snow-crowned, and supporting as it seemed the clouds and very heavens upon their granite shoulders, viewed from a point so high that the earth beneath must be seen thro' the rifts in the great billows of cloud, drifting and rolling, rising and falling, illumined and glorified by the sinking sun, at our very feet, were the characteristics of a scene indescribable and never to be forgotten.

But not even the incomparable surroundings could long lull me into unconsciousness of the fact that it was bitterly cold. But where was Fritz? None but he himself could answer. The observations were finished, the wind blew more bitingly than ever, running for warmth became tedious, still not even my glass nor most powerful *Jodle* could discover a trace of the missing Fritz. At last in very desperation I determined on retracing my steps and seeking guide and baggage. After a descent of a few hundred feet I could see down some ways farther, the *Verschwundener* lying wrapped in my overcoat in the sun at the base of a huge boulder; as he saw me approaching he rose and came to meet me, but his steps were faltering. In a few minutes I joined him to find him deathly pale, tottering and hardly able to stand. In a moment my knapsack was on my own shoulders, my brandy flask out and applied to his lips. The cognac and a 15 minutes rest worked such wonders that the thoroughly exhausted fellow pronounced himself ready to continue the descent in earnest. We decided that Fritz should spend the night with friends at the *Bachalp* while I carried out my plan of proceeding to the *Scheideck*. About five o'clock we reached the Alp, and there Fritz and I shook hands and parted with a *gluck auf* and an *Aufwiedersehen;* and the last I saw of him as I passed over the nearest height, he was standing near the châlet swinging his alpine hat and Jodling a farewell call.

Everyone knows theoretically of the suddenness of nightfall in the high altitudes of Switzerland, but few can fully appreciate the phenomenon who have not personally experienced its effects. But two hours of daylight still remained and I pressed

on, confident of reaching my destination before the trail became lost in darkness.

The sun was still over the horizon as the châlets of the *Obere Grindelalp* were reached, the highest alp or pasture in Switzerland, its low log huts standing by a beautiful spring flowing from the mountain-side nearly 7000 feet above sea level. It was milking time, and 226 cows were gathered before the châlets patiently though eagerly waiting each her turn, and at the sound of her name coming forward, receiving her handful of salt and giving down her day's hoard of alpine wealth. Refusing pressing and cordial invitations to halt and drink fresh milk I bade the *Senner aufwiedersehen* and trudged on toward the cabin known as the "Hotel du Scheideck" only half an hour distant, but hidden behind a sheltering elevation. Fifteen minutes of tedious tramping, and then without premonition darkness as balmy as midnight surrounded me. Still I knew the direction, and kept the points of the now useless compass in mind and was rather inclined to smile at the little misadventure, as a new experience. But when still another half hour passed and no sign of human habitation appeared, the fact dawned upon me that I was lost amid the snows and torrents and chasms of the Faulhorn at dead of night. Yet way below in the valley thousands of feet beneath my feet twinkled and glimmered the lights in the windows of Grindelwald, but for me those lights were farther removed than the stars shining in the heavens above. I had thought myself tired and hungry before, but now there was more important business on hand, seeking the Scheideck house was like searching for the proverbial needle, but with eyes blindfolded and hands bound. The alternatives were to pass the night in a snow drift, or find supper and lodging at the Grindelalp passed but an hour before. An attempt at the latter was the most comforting, and with a preliminary trial of the strength of my alpenstock I started on what I *guessed* to be a "bee line" for the alp. But oh! the course that line led me. Over slippery boulders, down the sides of ravines so precipitous that only clinging to the stunted evergreens growing from the crevices prevented my rolling into the icy waters beneath, fording of rivulets, wading of snow drifts, every step in darkness absolute, every foothold sought out by the alpenstock, which often sought in vain, being thrust out and down into the darkness, meeting no resistance and proving that the edge of an abyss had been reached and that the course must be changed. After some two hours of such experience with no intimation that the goal was nearer than before, fancy or the breeze brought a note, as of a tinkling bell to my ear, in an instant I was lying Indian fashion on the ground with ear pressed against its surface. Yes! 'Twas no delusion; faintly, but distinctly, bourn on the wind as I lay on the wet ground was wafted to me the sweetest music I ever heard, the low, distant, regular intonation of a solitary *cow bell*. The herd never wanders far from the châlet at night, and I knew that lodging, food and rest were not far distant. The single bell was soon re-enforced by others and then the very air was billowy with their ringing; a few moments later the cows themselves were reached and lowed contentedly as I passed among them; and there outlined against the sky rose the solid walls of the châlet, a moment more and I was beating with alpenstock against the plank door, and a voice within was calling *werda?* The owner of the voice was informed that if he would descend from his perch, light a glim, open the door, set forth some staff of life and divide his "shake-down," all questions of a private nature would be answered with equinimity and dispatch. He seemed inclined to investigate, came down the ladder, unbolted the door, and by the light of the tallow dip recognized the milking-time decliner of hospitality returned to claim it. A moment later I was seated on the cheese press eating bread from the end of a whole loaf and ladling milk from a *tub*. And then we climbed the ladder together, dry socks and overcoat were donned, and I crawled into my allotted nest of hay beside the half-dozen *Senner*. Then oblivion till the sun shone through the chinks in the logs, and the cows were lowing about the châlet demanding to be milked. An hour later my knapsack was hanging outside the door of the Scheideck hotel, while its owner sat in the morning sunlight, sipped hot coffee, and mused over his *night on the Faulhorn*.

Nieder-Marsburg, Westphalia, May 30, 1884.

CYCLE SUPPLEMENT.

The CYCLE Supplement will be issued as usual at the close of graduation exercises Wednesday morn-

ing. It will contain a complete account of Commencement exercises, the list of prizes, and other interesting matter. Do not fail to purchase a copy. Price two cents.

LOCUST AND WILD HONEY.

Ante up.

Isn't he elegant!

O "the little girls."

Four more Bachelors of——what?

Now you see it! Now you don't!

Y. O. U Yale. That's stale.

"By Gosh!" "Stop them balls,"

After Butler what? Certainly no more offices.

Prof. E. to Senior class—"Yes, you seem to be an ideal vacuum. Yes!"

S.—"Did Mr. T. *shout* at the serenade?"

A.—"Yes, he *shouted* to 'em to stop."

Taft was the second victim in Eighty-two. Leap year was too much for him.

The Botanical division visited Mt. Holyoke, and surrounding country, recently.

Eighty-three has made the quickest time on record. Hevia was married in October.

Tennis has been the game this spring. Baseball and other games have suffered accordingly.

Eighty-five has planted a class tree near the site of the new chapel, Prex. removing the first sod.

The President's reception cannot take place at his new residence, to the regret of all interested.

Eighty-one's class cup still reposes quietly in the vault; The latest returns from Japan report a girl.

It is not probable that the Brazilian fraternity will make Amherst their stopping place this summer.

Eighty-three is not as badly scattered a year from graduation, as some of the former classes have been.

Only one bicycle in college the past term. More will be looked for next year, as the interest is not waning.

The Essex County excursionists were not altogether pleased with the way the college farm is managed.

The college has received good treatment at the hand of the Legislators; now they should give the Experiment Station a chance.

Prof. G.—"Will some one mention the epic of America."

Kiah—"Yankee Doodle."

Rifle shooting is apparently on the decline, and glass ball shooting has also succumbed to the inevitable since Eighty-three left college.

The Drill Hall will again serve for graduation exercises. It is in better condition than last year, and presents a more creditable appearance.

A game of ball between the Aggies and Freshies of the Freshman class resulted in favor of the Aggies, 37 to 33. Time of game four hours.

F. H. Fairfield, who is chemist for the Standard Fertilizer Co, Boston, has been at work for Dr. Goessmann, in the "Lab.," the past month.

The Lieut. has been re-detailed for one year. We take it for granted that he will accept, and not let law take away his liberty for a while longer.

E. A. Jones represented the college at the Boston University commencement, June 3. His subject was, "The Political Duties of the Hour."

Eighty-three's class tree has twice died and as many times been replanted; this is not an omen of ill luck but simply a trial of their perseverance.

Can the politics of the "Lab." be a pointer toward the result in November? Of the quantitative workers four are Democrats and three Republicans.

The Geology class have made some interesting and instructive journeys to Mt. Holyoke, Pelham, and elsewhere, under the guidance of Prof. Emerson.

It is expected that pop-corn will furnish an interesting topic in the agricultural examination this year. We have advised the Seniors to be prepared for an emergency.

The Juniors were not robbed of Strawberry day this year. The varieties of constitutions as well as strawberries were well tested during the festive afternoon of June 17.

Through the instrumentality of Gen. Butler, we are again favored. The old rifles have been replaced by new Springfield, of a smaller bore, with all the accouterments.

A Russian astronomer has recently discovered that the moon is inhabited by living beings. We hope that this is true, but are afraid they will all prove to be luna-tics.

Conversion in high life. The maroon and white waved supremely in place of the blue. Such incidents leave a lasting impression on the eager and high-minded aspirants.

A paper devoted to Natural History, called the *Bulletin of Massachusetts Natural History*, has at last appeared from the quill of W. A. Stearns. May it live and prosper.

Previous to voting on the college bill in the Legislature, the Agricultural and Military committees visited the college in a body, and were apparently well pleased with what they saw.

We take pleasure in recording the election of Chas. Wellington, '73, to the Presidency of the Japan Agricultural College. The second graduate of M. A. C. elected to the position.

The change of the Board of Trustees from a self-perpetuating body to one similar to those of other state institutions, thus being appointed by the Governor, seems to recommend itself as a good measure.

Members of Eighty-six, with the aid of the weather gods, have kept the fountain plot in good contion, doing the work largely at class-work hours. The grounds as a whole have seldom if ever looked better.

A remarkable thing has happened to Eighty-one's class trees, which has no parallel in the scientific world; where they left horse-chestnuts, they will find on returning to their first reunion maples and lindens.

It is said that a young lady in the audience during graduation exercises last year was thrown into ecstasies of delight over the magnificent appearance of one of the speakers. Moral to Seniors—Tremble not, faint heart.

Eighty-four superintended the planting of a few trees in place of Eighty-one's condemned lot, and one of their own near the Drill Hall, that one has shown its disgust at such a class rather soon, for its demise is certain.

It has been recommended and seems to present itself favorably, that the members of the High School get up a baby-show. It is thought that the occasion would call forth a big house. The proceeds might go to pay the prizes.

1st Legislator—"What building is this?"
2d L.—"The President's house."
1st L.—"What are they stopping here for?"
2d L.—"They want some money to finish it."
1st L.—"Well, give them some money to finish it; don't get out here in the mud."

The insolence shown by the continuous hissing at the recent High School game, by the visiting party, proved a matter of no little comment, and showed to a marked degree the ill-breeding of the participants. Even the broadest rules of etiquette failed to sustain them, under the existing circumstances.

The New London and Northern after seeing steps taken in the Legislature to have the public of Amherst and other towns better accommodated, at last condescended to put on the morning and evening train again; running, for the present, only as far north as Amherst. They seem of the same state of mind as a certain New York millionaire, and while attending to the freight let the traveling public suffer.

The speaker of to-morrow, Mr. C. C. Coffin of Boston, is widely known as an able orator on all practical questions of the day. During the war he acted as reporter of the Boston *Herald*. His report of the battle of Gettysburg will always be considered a masterpiece. He has of late years been made famous by his histories for the young. His "Story of Liberty," "The Boys of Seventy-Six," and others can be found in almost every household.

A sarcastic Sophomore being accosted by a Freshman with a handful of Lichens, one of which he wished named, stood for a moment in revery, when he was suddenly interrupted by the descending tones of Freshman No. 2, with the following blank assertion, "Those Sophomores don't know anything about Lichens." As the Soph. turned on his heel the reply came short and pert, "No, we don't wish to *liken* ourselves to Freshmen."

As a record of analyses of fertilizers, ashes of plants and of fodder materials, the Bulletins of the Experiment Station are interesting both to chemist and farmer. As a large part of the work of the station appears in their pages, they should be more widely circulated. Some of the first numbers are already exhausted, but the same work will be found in the annual reports of the state board of Agriculture. The list of recipients is constantly increasing and fifteen hundred copies are now printed, with a prospect of more in the near future.

THE CHIMES.

We wandered in the moonlight pale,
While silver bells rang loud and free,
Thy thoughts were on their music sweet,
But mine were e'er of thee.

And looking on thy pure, brave face,
Your higher life inspired my own,
To tread its rarer atmosphere,
To live like thee alone.

The silver bells in other worlds,
Now hearest thou for evermore,
My thoughts to-night are still on thee,
And of those happy days of yore.

PERSONAL.

'71.

Lewis A. Nichols, recently returned from the West.

Edwin Smead, instructor in farming and gardening at Watkinson Orphan Asylum, Hartford, Conn.

Frank Le P. Whitney, clerk, shoe store, Roxbury, Boston Highlands.

'72.

J. W. Clark, superintendent of the Connecticut Valley Orchard Co., Deep River, Conn.

R. W. Livermore, Pates, Robeson Co., N. C., lawyer.

F. M. Somers, 49 Broadway, New York City, Watson & Gibson, brokers.

S. C. Thompson, New York City, Department of Public Works, assistant engineer.

'73.

D. P. Penhallow, McGill University, Montreal, Canada. Professor of Botany.

J. B. Renshaw, Spokan Falls, Washington Territory, clergyman.

Charles Wellington, President-elect of Japan Agricultural College.

'74.

Edward P. Chandler, Andersonville, Montana, cattle raiser.

John M. Benedict, Commercial Block, Bank St., Waterbury, Conn., physician.

'75,

Thomas R. Callender, Everett, florist.

F. H. Rice, Hawthorne, Nev., County Recorder and *ex-officio* Auditor of Esmeralda Co.

'76.

Geo. W. M. Guild, 17 and 19 Cornhill, Boston, wire business.

G. A. Parker, Tunis Mills, Talbot Co., Md., sup't of "Fairview Farm."

J. E. Root, Hartford, Conn. Retreat for Insane, assistant physician.

'77.

Charles Brewer, Orange, florist.

Atherton Clark, 131 Tremont St., Boston, clerk.

H. F. Parker, 5 Beekman St. and 182 Center St., New York City, mechanical engineer.

'78.

David E. Baker, Newton Lower Falls, physician and surgeon.

X. Y. Clark, P. O. Box 1151, Boston, scientist.

S. D. Foot, Paterson, N. J., Kearney & Foot, file manufacturers.

J. N. Hall, Sterling, Weld Co., Col., physician.

C. S. Howe, Akron, Ohio, Buchtel College, Adjunct Professor of Mathematics.

J. F. Hunt, Belmont, civil engineer.

Lockwood Myrick, selling agent for Randall's fertilizers, 43 Kilby St., Boston.

Frederick Tuckerman, Amherst, physician and lecturer at Mass. Ag'l College.

'79.

R. S. Dickinson, Columbus, Neb., farmer.

'80.

Wm. G. Lee, just returned from the West, at present at Amherst.

'81.

C. E. Boynton, Groveland, at last accounts a lecturer.

Charles A. Bowman, Brookline, civil engineer.

W. F. Carr, graduated recently at Mass. Institute of Technology.

H. E. Chapin, assistant editor of *Farmer's Review*, Chicago, Ill.

Boonzo Hashiguchi, Tokio, Japan, President of Gov't Sugar Beet Co.

J. L. Hills, assistant chemist, New Jersey Ag'l Experiment Station, New Brunswick, N. J.

Austin Peters, is about to study veterinary in London.

E. B. Rawson, 184 Hall St., Brooklyn, N. Y., civil engineer.

C. D. Warner, graduate of Johns Hopkins University, Baltimore, Md.

'82.

F. S. Allen, house surgeon at American veterinary college, New York City.

W. H. Bishop, Tongaloo, Miss., Sup't of Industrial Dep't, Tongaloo University.

Harry S. Brodt, Frankfort, N. Y., surveying, North River Construction Co., West Shore & Buffalo R. R.

M. B. Kingman, Horticultural Dep't, Mass. Ag'l College.

F. G. May, Orlando, Orange Co., Fla., farmer.

W. A. Morse, 19 Milk St., Boston, with Dennison Manf'g Co.

L. R. Taft, Bursar and Assistant Professor of Horticulture, Mass. Ag'l College. Recently married to Miss Ella Maynard of Northboro.

A. H. Taylor, Hartington, Neb., stock farming.

J. L. Windsor, private secretary to treasurer of Northern Pacific R. R., corner Broadway and 4th St., St. Paul, Minn.

'83.

S. C. Bagley, 35 Lynde St., Boston.

E. A. Bishop, Diamond Hill, R. I., with jeweler, Providence, R. I.

D. H. Braune, Nova Friburgo, Province Rio de Janeiro, Brazil, planter.

A. A. Hevia, 75 South 10th St., Brooklyn, N. Y With Brentano Bros., publishers, 5 Union Square, New York City. The first in the class to be married, October, 1883.

S. M. Holman, Jr., Attleboro, student, Harvard Medical School.

J. B. Lindsey, C. H. Preston and H. J. Wheeler, assistant chemists, Mass. Ag'l Experiment Station, Amherst.

C. W. Minott, 2, 4 & 6 Washington Sq., Worcester. Has charge of W. H. Earle's farm.

D. O Nourse, foreman of one of the farms of Conn. Valley Orchard Co., New Britain, Conn.

THE NATURAL HISTORY SOCIETY.

The Natural History Society has achieved the success which the eminent ability of its founders gave us reason to expect. Notwithstanding the very busy life of the year, there was throughout a uniformly good attendance at the meetings. Much gratitude and thanks are due to Prof. Goodell, who was instrumental in securing the services of the admirable lecturers. Efforts will be made on a larger scale next year to secure the services of other well-known men, now that the students have shown their appreciation of such opportunities.

The programme for the winter term was as fol lows:

Jan. 24. Discussion—South America: Its Geography, Geology, Mineralogy, Native Races, Botany and Ornithology.

Messrs. Leary, Flint, Howell, Copeland, Avery, Barber.

Jan. 34. Lecture—Fermentation and Bacteria.
PROF. MANLY MILES, M. D.

Feb. 14. Essay—The Absorbent Processes of Plants. L. C. LEARY.

Feb. 21. Discussion—Australia.

Messrs. Phelps, Goldthwait, Brooks, Leary, Flint, Barber.

March 6. The Digestive System of the Cat.
E. FLINT.

March 20. Lecture—Diatoms.
PROF. C. W. EDDY.

March 27. Discussion—Fungi, their nature, influences and uses.

Messrs. Phelps, Brown, Stone, Copeland.

The programme for Spring term being:

April 23. Essay–Phosphoresence. L. C. LEARY.

May 1. Lecture—Kracatoa and its relation to the red sunsets of '83—'84. PROF. B. K. EMERSON.

May 8. Discussion—The Horse. Origin and development, habitat and breeds.

Messrs. Sanborn and Leary.

May 15. Lecture—The Migration of Birds.
PROF. H. TYLER.

May 27. Essay—A Study of the Vermes.
G. H. BARBER.

June 5. A Study of the Cryptograms.
C. S. PHELPS.

THE CYCLE.

Supplement.

Containing an account of the Exercises of Commencement Week,
List of Prizes, Etc.

COMMENCEMENT EXERCISES.

The weather has proved very favorable for Eighty-Four's Commencement; but dust was no name for it. It not only penetrated the clothing but seemed desirous of reaching the very marrow of one's bones.

The Doctor and Mrs. Miles gave a reception to the Senior and Junior classes a few evenings ago, which although short proved very enjoyable to all.

The roses which decorated the Chapel during Sunday's service were the gift of "Pa" Baker.

The drills for the past few days have been held in the early morn, even before Bacon's repasts could be served. Mounting cannon at such a time reminds one of Josh Billings on the healthfulness of early morning work, when he said, "If you want to work before breakfast eat your breakfast beforehand."

The President delivered the baccalaureate sermon to a large audience, Sunday morning.

Rev. H. W. Lathe of Northampton addressed the College Christian Union, in the Chapel at half-past seven Sunday evening. The address was an interesting and instructive one, being listened to with close attention by the audience.

The President supplied Mr. Lathe's pulpit during his absence.

The Juniors enjoyed a bounteous repast in the strawberry field Monday morning instead of a week earlier as stated in the CYCLE, although the frost had injured them to a considerable extent enough were found for thorough testing. The Sophs. had the start by taking theirs before breakfast.

Most of the fraternities held their reunions on Monday evening, as usual. After the prize speaking the D. G. K. fraternity held a secret session in the chapter hall and adjourned from there to Frank Wood's where an unusually large number did ample justice to the feast placed before them, and with music, toasts and stories of the old times the occasion passed very pleasantly.

The Q. T. V. fraternity held its reunion supper at the Amherst House, and after partaking of Landlord Conkey's supply of good things and having a good time generally the company broke up in the early hours of the morning.

The Phi Sigma Kappa fraternity held an informal banquet in their society room Monday evening. The occasion was a pleasant one. Wit and humor flowed freely from all. Mrs. Kellogg catered for the occasion.

The college Shakspearian Club held a reunion in their room and the occasion was made pleasant by the presence of some of the older graduates.

The Farnsworth prize speaking of Monday evening drew a large audience. The hall was beautifully decorated with bunting and flags, besides some three or four hundred Chinese lanterns which were strung from the beams, making a very beautiful appearance. Music was very acceptably furnished by the Easthampton Orchestral Club.

The speaking, it is thought, would not compare favorably with that of former years, although the selections were many of them of the first order. The judges were Prof. Genung of Amherst college, C. O. Lovell and Lockwood Myrick of '78. The following was the programme:

FRESHMEN.

1. JOHN JOSEPH SHAUGHNESSY, STOW.
   "Destiny of the Human Race."—*J. C Zachos.*
2. HERBERT JUDSON WHITE, WAKEFIELD.
   "Eulogy of Lafayette."—*J. Q. Adams.*
3. OSGAN HAGOPE ATHESIAN. SIVAS, TURKEY.
   "Disobedience to Law."—*H. Johnson.*
4. SILAS JOHNSON NOURSE, BOLTON.
   "Bunker Hill Monument."—*D. Webster.*
5. EDWARD WILLIAM BARRETT, MILFORD.
   "The Representative Soldier."—*J. D. Long.*

SOPHOMORES.

1. ARNO LEWIS KINNEY, LOWELL.
   "The City of Columbus."—*S. W. Butler.*
2. GEORGE SAWYER STONE, OTTER RIVER.
   "The March of Attila."—*Anon.*
3. WILLIAM ALFRED EATON,
   PIERMONT-ON-HUDSON, N. Y.
   "The Union."—*D. S. Dickinson.*
4. WINFIELD AYRES, OAKHAM.
   "Battle of Marengo."—*Anon.*

Gov. Robinson and staff arrived on the evening train, and were ushered into the hall just at the close of the speaking. The Governor made a few short, pleasant remarks, after which followed the informal reception and a general shaking hands.

On Tuesday morning at 8-30 the seniors took the oral examination for the Grinnell prizes. But a small number were present and the examination passed off quickly and quietly. There was no printed list of questions as heretofore and the Sen-

iors were at the mercy of the examining committee. The written examination which is fully as important as the oral took place a number of days before.

The candidates for admission, some twelve or thirteen in number were examined at the Botanic Museum at 9 A. M. So many at the June examination is an indication of a large number for the class of '88.

Early in the forenoon, the Freshmen visited Prof. Bassett in his lecture room and presented him with a very handsome cane as a token of their esteem, which was very gratefully received by the Professor.

About 9-30 A. M. the Governor and staff appeared on the grounds near Ex-President Clark's and were greeted with a salute from the artillery detachment. Then they proceeded to the Experiment Station where they were shown what is being done for the farmers of the state and seemed well pleased with it all. After a short inspection of North College they proceeded to the parade ground where the Governor was shown a drill in sabre exercise, bayonet and manual of arms and artillery drill. Battalion drill was dispensed with owing to the short time of the Governor's stay.

The crowd which had assembled proceeded somewhat slowly to the Drill hall where they were addressed somewhat at length by Col. Needham and Gov. Robinson. Col. Needham in his speech followed up the progress of the college from the time it was being agitated in Congress to its present prosperous condition. Gov. Robinson received the attention of the audience while he spoke of the support the State was giving the institution and calling upon the people of the Commonwealth to send their sons here. The gubernatorial party were then conveyed to the depot to enable Gov. Robinson to be present at the Harvard Commencement exercises.

The military prize theses were a source of trouble to the Seniors as usual. Capt. Herms was the successful one, but they were not read before the public as they have been for the last few years.

One of the exercises in drill which took place while the artillery detachment was performing, was a prize drill in the manual of arms by members of the Freshman class. The judges were C. O. Lovell, '78, C. D. Warner, '81 and H. J. Wheeler, '83, together with Lieut. Bridgman. The competition between the three or four best drilled men was quite close and especially between the two successful ones, E. W. Barrett and F. S. Clarke who were awarded the prizes in the order named.

The Alumni held their first annual dinner in the college Chapel at 2 P. M., and it was so successful that it is intended to make it a permanent institution. There were present as invited guests, the President of the college, members of the Board of Trustees, and Board of Agriculture, members of the legislative Committee of Agriculture, and others.

After the repast prepared by Caterer Bacon had been disposed of, and in the absence of the President, Mr. Bowker, '71, Vice-President, called the meeting to order, and called upon the President, Col. Needham, Mr. Hadwen, Senator Barrus, Ex-President Stockbridge and others, who were listened to attentively. The manner in which Prof. Stockbridge was received by the alumni showed what a kind feeling they have for him.

After the Trustees and others had retired, Mr. Bowker called upon the different classes, who interested the audience for a time.

As so large a number of the alumni were present at the dinner it was thought best to hold the business session immediately after the dinner instead of Wednesday morning, and over two hours were spent in transacting important business.

The President's reception took place Tuesday evening. Owing to the inclemency of the weather the attendance was rather limited, there being but a slight sprinkling of the fairer sex. Mr. Bacon furnished the refreshments, and all spent a most enjoyable evening. The whole college were cordially invited to attend, contrary to the custom of former years. The President's daughter, Miss Grace, of Smith college, was present and aided her parents in receiving the guests.

The class reunions were held Tuesday evening. It was the first time that four re-unions were held at the same time. The classes of '71, '75, '78 and '81 held meetings which were mostly well attended. '82 held a sort of informal reunion there being a goodly number present, although their three years' anniversary does not come till next year.

A shower Tuesday night laid the dust and the weather of Wednesday was the best of the week. The graduating exercise took place in the Drill hall at 10 A. M. Wednesday. The custom of having but one speaker for the graduating class was introduced this year owing to the small size of the class. The valedictorian unfortunately was unable to speak on account of sickness and his valedictory was read by the President.

The diplomas of the college were conferred upon the four members of the class and upon the three matriculants of the Boston University.

Prizes were awarded as follows:

Farnsworth Gold Medals—W. A. Eaton, '86, E. W. Barrett, '87. *Farnsworth Silver Medals*—G. S. Stone, '86, O. H. Ateshian, '87. *Military Prize* for the best essay on "The Battle of Marengo," Chas. Herms. The latest reports indicate that the *Hills Botanical Prizes* will not be awarded this year. *Grinnell Agricultural Prizes*—E. A. Jones $50, Chas. Herms $30.

THE CYCLE.

VOL. VII. MONDAY, JUNE 22, 1885. NO. 1.

Published by the Aleph Chapter of the Φ. Θ. Χ. Fraternity, Mass. Agricultural College.

ORDER OF EXERCISES,

For the Fifteenth Graduation Anniversary, June 21, 22 and 23, 1885.

Sunday, June 21.—Baccalaureate Sermon in the Chapel, at 10-45 A. M.

Address before the Chrsitian Union, by Prof. A. P. Peabody, D. D., Preacher to Harvard University, at 8 P. M.

Monday, June 22.—Grinnell Prize Examination in Agriculture at 1-30 P. M.

Military Drill of Junior classes and reading of Prize Thesis, at 3-30 P. M.

Farnsworth Prize Speaking, at 8 P. M.

Tuesday, June 23.—Meeting of the Trustees, in the Botanic Museum, at 8-30 A. M.

Graduating Exercises at 10 A. M.

Alumni Dinner, at 1 P. M.

President's Reception, at 8 P. M.

Again we invite your attention to the Cycle, whose advent on Commencement week has long been so certain that no one doubts its coming. The seventh volume is now presented to you, and the editors have labored with untiring zeal to make it even more interesting than previous numbers. Democratic in its nature, radical principles seem at times bound to claim consideration. As advocates of reform we do not claim the wisdom of the wise men of old, nor desire the glory of a Washington, yet what little our mite will enlighten the minds of our readers, we hope will be appreciated. What at first sight will, perhaps, seem frivolous and vague, a little after thought may prove to be of vital importance. While we know that the Cycle is largely read throughout college, yet we beg leave to solicit the same consideration and patronage which has graced our efforts in former years.

We have no doubt that an early death to the Cycle was predicted when, six years ago, its first volume was given to the college world. Passing through trials and tribulations, it has kept above tide and answered the purpose, in a degree at least, of the ordinary college paper in an institution where a monthly edition would not receive the support that would warrant a long existence.

Special attention has this year been paid to the "Personals," a portion which the searching eye of an Alumnus is sure to reach. While entire impartiality and the closest accuracy has been attempted, mistakes are more liable here, owing to our limited intercourse with graduates in the distance.

We are aware of a lack of ingenuity, yet cleverness has been our aim. Craving no individual glory, we have endeavored to make this volume a strict advocate of all that will promote general welfare.

An institution that may be considered the daughter of M. A. C., is the Imperial College of Agriculture in Japan. Founded in 1875 by Col. Clark, through thousands of vicissitudes it has struggled on until the previously strongly conservatiue advocates of classic education have been obliged to yield. The demands of the times called for a more scientific and practical system of education, and this institution proves a great aid in supplying the want. The *rationale* and success of our institution are what caused it to be taken as a model, and since the founding of the college in Japan its faculty has consisted largely of graduates of our own. By leave of absence for one year from M. A. C., Pres. Clark, during the first year of the college's existence, filled the president's chair. He was followed by William Wheeler of '71, who very successfully

filled the position until some time in 1879. Prof. D. P. Penhallow followed Mr. Wheeler, and for the short time he was connected with the institution did much to promote its interests. Who is the present incumbent of the position we are unable to state. Beside the various presidents we have furnished, the chair of Mathematics was for a time filled by Cecil Peabody, at one time a student here. The department of physiology, anatomy and hygiene is now in the hands of Prof. Cutter of '72. Prof. Brooks of '75 has the agricultural department. Besides these, Prof. Stockbridge, who sailed for Japan in April, will be more or less connected with the college. It is pleasing, indeed, to see our graduates filling positions of trust and honor, and coming out far ahead of men who have received, perhaps, more thorough training, but that which is far less practical.

According to a certain school of philosophers, "man is what he eats," and therein lies one phase of culture, and a principle of vital importance to whoever has charge of the "hash-house" next year. There is no truer gauge of a man's calibre than the capacity of his mouth and his manner of filling it. But why should not the "Aggie" boarding-house be a school of manners where Freshmen would undergo a gradual evolution from the lowest forms of animal instinct? Who would think of discussing the higher aspirations of the inner life with a Sophomore who habitually eats with his knife? Can one expect to find those subtle perceptions of moral obligation in one who strains at a camel when he should be satisfied with a gnat? But to return to the original point. Let us have something good to eat and well served another year, and we shall not ask for a bewildering array of beauty in the waiters, or even a superabundance of smiles, nor for hairs in the butter.

An improvement in the appearance of the grounds after the promised structures are secured, could be made by moving the farm-house to a position south of the barn, and nearly on a line with the front of the same. As the college is approached from the south, by Lincoln avenue, this building interferes to a marked degree with the view and general appearance of the other buildings. While its removal to this location would be an advantage because of the protection offered in winter by the larger structure, the cost would be very slight. Improvements, we are aware, must be reached by degrees, but anything that tends to beautify the general appearance of the grounds should receive prompt attention.

The grumbling shown about one of the departments this year has been wholly uncalled for, and it is to be hoped that the trustees will not yield to the cries of the few who have tried to distinguish themselves by means considered out of place for those who are supposed to be college students. The mathematical department has labored this year, as all other departments have, under disadvantages which are not the fault of the person in charge. With new apparatus, and less of the silly, childish tricks of the students, the department will, under the same management, be a prominent one the coming year.

There is a much needed change in the agricultural department. During this year the instruction given has not been practical enough. Theoretically, good work has been done; but this is not enough for a person who is to become a practical farmer. It is a noticeable fact, that there are many who can tell perfectly well all that has been given in the lectures, but who do not know how to hold a plow or drive a pair of oxen. A grave mistake was made in the total abolition of class work. It is true the majority of students will never consent to have class work as it was carried on when abolished. They grumble at being placed day after day with pick, etc., clearing up swamps, digging potatoes, husking corn, or plowing; but if they have a day on one and then upon another thing, and the work given as a lesson, rather than for a few cents, it will be gladly taken hold of by the students, and when they are called into active service they will not have to take a day to learn from some one how to hold a plow. Scientific agriculture is well as far as it goes; but scientific and practical agriculture combined is essential for the rightful education of a farmer.

We hope the rigid economy which has hitherto prevailed in regard to instructors' salaries will not hinder the retaining of Professor Clark. As a teacher of geology, mineralogy and zoölogy, he has

been very successful here, not only in imparting knowledge but in securing the esteem and respect of his classes. He is a special student and intimate of Dr. Emerson, the distinguished scientist, and has done important and valuable work in his line at Washington. We are decidedly in need of such men who awaken a genuine enthusiasm in our work. Good instructors will draw students much quicker than good buildings. The chair of natural history was long without an incumbent but its present occupant fills it with entire satisfaction.

The course of training is now, with two exceptions, very satisfactory. Our practical work in agriculture, is made reference to elsewhere; the other we will now briefly cite, hoping to thus reach and open the ears of the proper authorities. It is now pretty well conceded, that for a thorough education of an agriculturalist French and German are almost as essential as agriculture itself. Still as the course now stands, those who take agriculture are shut out from both French and German, and vice versa. It would only take a few moments arranging to set this matter at rights, and the students trust that ere long, as the list of mistakes are blotted out, they will see this much needed change.

In the action of the president, at the request of the Senior class, in dispensing with the old plan of having a valedictorian appointed, a custom obsolete at most of our larger institutions, has at last been introduced here. Though there may be honors in leading a class through college yet he who studies with this object foremost in his mind falls far short of the mark. Often an empty honor, accompanied with slurs from one's fellow students, the position of valedictorian frequently proves anything but desirable. In an institution intended for the promotion of "liberal education" students should be allowed the privilege of carrying on special lines of work, and if in so doing studies considered of little value to them in their intended vocations are neglected, it is no indication of lack of ability. On the other hand he who neglects his mental training to the extent of not forcing himself to labor in fields other than those to which his own inclinations turn, fails to lay that broad foundation for intellectual growth, the corner stone of which is man's will power, that will enable him to surmount the great obstacles, often repugnent in their nature, constantly met with in life's daily path. While pages might be written to vindicate one in making the best possible showing in scholarship during his college course the facts are too evident, in the eyes of all thoughtful men, to require further argument. On the whole we think the change an admirable one, the only possible objections being that it was not advocated much earlier.

The changes in the courses of study in our large colleges which are advocated by President Eliot and others, are quite strongly opposed by some of the leading educationalists of the country. Whether our colleges can adopt the system of the large universities in Europe is doubtful. Hitherto we have had some idea as to what the degree given at the end of a college course covered, in order to gain it what studies must have been pursued, and what attainments were likely to be found in one possessing it. But if the courses are to be so extended, the whole range of studies made so nearly optional that a wide variety of attainments secure the same degree, then the practical value of such a degree is materially lessened.

Let the literary colleges stick to their Latin and Greek, studies acknowledged almost universally as of the greatest value, and let the wide study of the sciences be left to our scientific and polytechnic institutions.

Again the lights of Beacon Hill have shed a ray of the generous spirit upon our dauntless heads. Even more than we dared hope for has been portioned out to a high and noble cause. Massachusetts sees that in order to hold her preëminence in all other matters she cannot fall behind other states in questions of education. To the versatile genius and untiring zeal of our representative we owe much. It is hoped that the same skill and judgment will be used in matters of expenditure as was exercised in securing the appropriation.

While rooms are needed in which to store apparatus, an immediate expenditure in this line would be justifiable. Microscopes and physical apparatus are both necessary to carry on the work of the coming term. The matter of building a series of cot-

tages has been suggested. While for some reasons these might be desirable, yet it would seem that on spacious grounds, like our own, large buildings would give far better architectural effect. With greater cost in construction, in heating and repairing, cottages would have very few advantages over the dormitories. Many students would prefer to live in private families, and anything that tends to discourage private enterprise in building about the college, should not be counseled. So far as we can learn, the students generally do not favor the scheme, and while it may have a few advocates, we think the balance of power is against it.

EXPERIMENT STATIONS.

When the first German Experiment station was put into operation in 1851, at a small farm-house in Mœcken, it was not entirely a new idea that scientific research must be of immense advantage to the study of all agricultural questions.

The beginning made by Davy, De Sanssure and Spengel in the early part of this century was followed up by Liebig and the younger men whom he inspired by example and instruction, and educated farmers were already profiting by the work.

The Agricultural Chemistry Association of Scotland had existed long before. Bousingault in France and Lawes in England had begun their labors.

But this little enterprise at Mœcken marked a new era in the history of agriculture. It was the first attempt of a society of farmers to carry on scientific investigation for the benefit of the great mass of the population. By showing their own readiness to contribute to its support, with little effort they secured the aid of the government. Within two years a second station was established at Chemnitz, and for a period of at least twenty years, with only two exceptions, stations were established yearly. The experiment station soon began to be regarded not as a costly affair or a luxury in which universities and wealthy gentlemen might indulge, but as a most remunerative enterprise, a most efficient means for the diffusion of knowledge throughout the agricultural community.

Not only was more knowledge gained by the many, which the chosen few had known before, but new methods of investigation were carried on such as the ordinary farmer could not enter upon, because of lack of means not less than for lack of knowledge. The rate at which experiment stations fruitified in continental Europe is really surprising. From this little nucleus at Mœchërn they have spread in all directions, until there now exist not far from 130 throughout the continent. One great improvement in the German stations over our own lies in the fact that very few are devoted to all the common lines of investigation. Certain ones are especially engaged in the study of cattle feeding, others to investigations of vegetable growth and the action of manures, some to grape and wine culture, and still others to the silk and milk industries. One station can thus begin certain lines of investigation, and carry them through without dividing their time with other work, perhaps to the detriment of all.

In our country, experiment stations are not as numerous as it would seem they should be. Only eight states, North Carolina, Connecticut, Massachusetts, New Jersey, New York, Ohio, Wisconsin and Maine, have well established independent stations.

Two more will soon be added to the list, as Louisiana and Virginia have taken steps in this direction, both having applied to Dr. Goessmann for charters of our own.

The New York station is probably the most heavily endowed, having an annual income of $20,000, the others varying in sums from $5,000 upwards.

The work accomplished in our own land cannot be overestimated, and as the fields for investigation widen, new means for concerted action must be adopted. The call just made by the new Commissioner of Agriculture for a conference of representatives, June 8, from the agricultural colleges and experiment stations, we feel will prove a fruitful source of benefit to all interested in this work. The results obtained from experiments made on the grounds at Washington cannot be made to apply to the whole country, and it seems a most wise plan that some united action throughout the whole United States be made, in carrying on this useful work.

OUTSIDE CONNECTIONS.

"Aggie" is noted for her home-keeping tendencies, and we are inclined to think too much so for

her benefit. There are many ways in which she might have a friendly intercourse with other institutions, and thus be the means of bringing to light her hidden talent. Not long ago a person in a neighboring town where there happened to be at that time several members of the Glee Club, said: "Why! I did not know you had such talent at your college." This is also said by many wherever our students go. The yearly exhibitions of our Sabre detachment have done something towards giving the outside world an idea of our work; but it cannot give so true an impression as some of our literary societies would if they would occasionally exchange speakers.

If our Christian Union would join the Y. M. C. A., and send each year as it did this last, delegates to the annual conference of that body, we would be able to join our work in this line with the work of other institutions, and receive, and perhaps give new stimulus.

The Natural History and Washington Irving Societies might be a means of doing a great deal of work that would assist in strengthening our connection with those who are laboring in the same fields at other institutions. These societies in the past have had interesting courses of lectures, and if they would only in the future make the lectures available to outsiders, and avail themselves of the advantages of outside lectures, not only would each member, or each society, be strengthened, but they would be a means of spreading the curtains which now seem to hide our much loved college.

A practical-scientific college, as she stands for the benefits of agriculturists. "Aggie" ought to be represented, more than she now is, at all agricultural gatherings. If the Faculty and students would attend these gatherings the farmers would see that their institution is not a matter of show, but that it has their interests at heart, and stands ready for their use. If the different agricultural organizations would each year make an excursion to, and look over their college, they would see its value. If so situated as to be unable to make an excursion, if they would only send a delegate or two, and have them on their return report fully the result of their visit, they would accomplish a good work at a comparatively little trouble.

These few statements would be of great service to all concerned if carried out.

ON THE STUDY OF HOMER.

Books of all things we know are best,
They never forsake us as others do,
And never disturb our inward rest.

Emerson in his essay on books says,—"Go with mean people, and you will think life is mean." Then read Plutarch and the world is a proud place, peopled with heroes. So it is in reading Homer. The page glows with the passion of celestial wrath or softens into the mild reflection of human tenderness. The scene is constantly shifting; the interest is unceasing. The poem forms a battle-piece brilliant in its coloring, and of striking power in its display of groups and single figures. Men and gods mingle in debate and in combat.

The poet has so crowded the scene with various personages and incidents, his work displays so much of passion and of action, that we find it difficult to realize that not more than one month of the ten years' siege furnished the artist all the material for his splendid pictures. All the light of Homer's brightly burning imagination, all the glow of his enthusiasm are concentrated upon that life and death struggle for victory which followed close upon the quarrel between Agamemnon and Achilles. Those days and nights, however, which close the history of Troy, are so crowded with events that the reader finds it difficult to fix the order of their succession or the length of time they occupy. Every actor preserves his own peculiar character, assigned him with peculiar skill by one single rapid stroke.

He always suits the language to the speaker and the circumstance.

Odysseus can reason, persuade and threaten, or gracefully tell his story at the social board. Thersites can be nothing unless he is insolent and abusive. What a perfect picture of the life of the early Greeks. In them we see reflected the motives of human conduct—our own real passions and thoughts, which the refinements of later times lead men mostly to conceal. Here is a picture of the youth Harpali, who was slain by Meriones, and his comrades placing the lifeless body on a car, in sadness brought it back to town, and Homer adds, his father followed with them, shedding tears:

Sinking down where he was, in the arms of affectionate comrades,
Breathing his life away, like a worm of the dust, on the dry ground,

Lay he extended and poured forth dark blood.
Round him they busied themselves, the Paphlagonian heroes,
Lifting him into a car, they bore him to Ilium sacred.

And here is a pathetic picture of Helen at the walls of Troy, watching the host of warriors, and reminded of her own brothers who have died without her knowledge in Sparta. The noble bearing of the heroes remind her of them and of 'the happy days of old.'

Clearly the rest I behold of the dark-ey'd sons of Achaia;
Known to me well are the faces of all, their names I remember.
Two, two only remain, whom I see not among the commanders.
Kastor fleet in the car—Polydeukes brave with the cestus—
Own dear brethren of mine—one parent loved us as infants.
Are they not here in the host, from the shores of loved Lacedæmon.
Or, tho' they came with the rest in ships that bound thro' the waters,
Dare they not enter the fight, or stand in the council of heroes,
All for fear of the shame and the taunts my crime has awakened?
So said she;—they long since in earth's soft arms were reposing,
There in their own land, their fatherland Lacedæmon

The Odyssey introduces us to the acquaintance of a large number of common people, while the Iliad gives us scarcely a hundred verses of their talk. In the councils of state and of war, among the gods upon Olympus, at the palace of the Trojan king, and at the headquarters of the Greek commanders, all is dignified formality and politeness. The babbling of Thersites is the only exhibition of buffoonery in all the Iliad, and here it is held up to utter detestation.

The scenes of the Odyssey are familiar, its language corresponds.

As an example of Homer's familiar style in the Odyssey, there is a comparison where he shows the ease with which the Cyclops closed the entrance to his cave with a large rock. The stone was so large, he tells us, that not even two and twenty wagons, strong four-wheeled ones at that, could have transported it, and yet, the poet says, the giant put this in its place as easily as he would put a cover on its quiver. Now the quiver worn over the left shoulder was likely to be fitted with a cover so hinged that it would need only to be raised to draw the arrow forth, when, by its own weight, the cover would fall in place again. The putting on of the cover of a quiver would be a proverbially easy matter, equivalent to costing no effort at all, and this is how Homer seems to have regarded it.

COLLECTING CURIOSITIES.

No one realizes the broad field Nature affords one for this work until he is fairly "in the mill." Inspired, no doubt, by the encouraging and interesting words of the professors, many have done considerable work in this line here this spring. You scarcely go out on the grounds but what you either see a student with a botany can over his shoulder, or hear some one call out, "Here's a bug! Come quick!"

After a person gets once started, if he has any love for his work, he finds himself so fascinated that even the military exercises are wont to be neglected. Several have been known to leave their cots long before it was daylight, to see what varieties might be secured by the "early bird;" and it is seldom that the early bird has lost the worm.

Besides the value attendant on the work, there is not any better recreation, or anything presenting such pleasant adventures. Think of a tramp to Toby or to Holyoke, or even the Ravine. Imagine a student with a big tin can over his back, a test tube and a bottle of ether or chloroform in his pocket and a gun in his hand, swinging merrily across the fields. Now his attention is attracted by a Ceryle or Hirundo, and bang goes his gun; he has scarcely secured his prize when a Bombus hums by his ears, and out comes his test tube, and he tests the intruder with the contents of the other bottle. Hardly has he recovered from the shock of securing these invaluable specimens, when he finds his feet are about to be placed on one of that precious and rare specimens of the vegetable world, Houstonia Cærulea. With all due caution his tread is lightened and his prize tightly sealed in the receptacle, which by this time has made his back ache.

Loaded with such precious freight he wends his weary way to his room, and there, with appropriate ceremonies, he puts them in their final resting place. This he accomplishes in season to stow away a good

supper, and then seeks to cram his cranium with knowledge for the coming day; but somehow Nature's field confronts him again, for a few Culex pipiens have found a way to soothe his weary hours. Half disgusted and half excited over the results of his day's work, he slams his book, when lo! a gentle tap is heard on his window, and he rejoicingly opens it to welcome the stranger in. Such a welcome as it is. He is soon waged, and the student's eyes glow and hair stands straight for joy at having secured something no one else has ever had. Tired and sleepy from excitement and care he seeks his downy pillow, only to pass a night of torture from sights and experiences of the day. Bright and early in the morn he rises and hastens to show his mates his last capture. His delight increases until he happens to strike the Professor's presence; but here he pines away when told: "You have, indeed, a very common specimen—Lachnosterna fusca,—or perhaps more familiar to you as a June-bug."

DARWIN ON THE EARTH WORM.

One of the most prominent features of Darwin's mind as a philosopher and student of nature was that gentle persuasive power which could penetrate the reserve of nature and force it to disclose secrets, the despair of smaller men. This faculty is more particularly exhibited in his work on earth worms in their relation to vegetable mould. Had he done no more than this for science he would have left an indelible mark on its progress and placed himself in the front rank as an investigator.

He made his first study of this subject in 1837, and forty years later, revealing the patient devotion of a true scientist, published his book, enriched with the experience of a long and busy life. It is difficult, in a short *resume* of the work, to do justice to a series of experiments which he made when he first disclosed the structure and habits of the earth worm. It is composed of more than one hundred cylindrical rings each furnished with minute bristles. Its muscular force is well developed. It can crawl backwards as well as forwards. It breathes by its skin. Its nervous force is well developed and it is very sensitive to touch. It is destitute of eyes and yet is not quite insensible to light, being affected more by its density than its duration. It does not possess a sense of hearing and yet it is quite sensitive to vibrations of solid objects.

The mouth, which is situated at the anterior end of the body, opens into the pharynx, and this into the æsophagus in the lower part of which are three pairs of glands which secrete carbonate of lime. Their function is probably to aid in digestion. These calciferous glands as they are called are quite unique, nothing like them being found in any other animal.

The worm consumes half-decayed leaves and bits of soft rock and stone. It also swallows an enormous quantity of earth out of which it extracts any digestible matter which it may contain. This material, broken up, digested, and saturated with intestinal secretions, is mingled together and thrown out in the form of castings. These castings form the rich, dark colored humus which almost everywhere covers the earth's surface.

The layer of grass covered soil was formerly looked upon as the datum line from which the denudation of exposed surfaces might be measured, but Darwin has shown the constant bringing up of the soil from beneath the surface by these little creatures and its consequent exposure to the atmosphere, causing it to be dried up and blown away by the winds or washed to lower levels by the rain, tended slowly to lower the level of undisturbed grass covered land. The earth worm, then, has played a most important part in the world's history and in bringing to light its operations. Darwin first called the attention of geologists to an agency the magnitude of which they hardly yet appreciate. Darwin claims that the whole superficial bed of vegetable mould passes through their bodies in the course of a few years, and in proof of this statement instances a field covered with an extremely scant vegetation and thickly scattered with stones, which in thirty years was entirely covered with mould, while the stones had disappeared beneath the surface.

They are continually exposing fresh surfaces and materials to the action of carbonic and humus acids in the soil or mingling them together in the air, and thus here again we have another example of a seemingly insignificant animal playing a very important part in the economy of nature.

MORN AND NIGHT.

I.

At morn amid the cherry bloom
I heard two robins singing
Love's music in glad ecstasy,
Like sweet bells wildly ringing.

II,

At eve I heard one sing again.
The bloom, the odor still were there,
But O! the burdened song of pain,
Love's longing through the dewy air.

THE W. I. EXHIBITION.

Quite a large audience gathered to listen to the exhibition of oratory under the auspices of the Washington Irving Literary Society on March 25th. The practice of giving such an exhibition, which was so successfully inaugurated a year ago, was continued this year with much success. An additional attraction this year was made by Professor Maynard, in the shape of a prize which was divided equally between the best speakers from each of the two lower classes.

The music was furnished by the "Aggie Octette," consisting of Messrs. Mackintosh and Barber, first tenor; Wheeler and Brown, second tenor; Stone and Smith, first bass; Marsh and White, second bass.

The singing was received with much favor, and the performers were recalled after nearly every selection. The best and most striking feature was a whistling solo by Mr. Wheeler, which was much applauded.

The speaking was of first-rate order throughout, and was well received. The following program was presented:

MUSIC.

A Legend of Bregenz,.....*Proctor*

MEEHAN, '87.

Heroes and Martyrs,.....*Chapin*

SHIMER, '88.

MUSIC.

The Loss of the Birkenhead,.....*Anon*

MARSH, '87.

Reply of Pitt to Walpole,.....*Chatham*

COOLEY, '88.

MUSIC.

The Returning Soldiers,.....*Manning*

LOOMIS, '88.

A Rajhput Nurse,.....*Arnold*

BARRETT, '87.

MUSIC.

The Face Against the Pane,.....*Aldridge*

WHITE, '87.

The Roman Soldier,.....*Anon*

AYER, '88.

The prizes were awarded to Barrett, '87, and Ayer, '88.

THE PURPOSE OF FLOWER MORPHOLOGY.

A highly original and curious field of study has of late years been opened to the botanist in interpreting the meaning of the vast number of floral forms which to the ordinary observer have seemed purposeless. This study of the extraordinary variety exhibited by flower morphology and the remarkable modifications of leaf forms has thrown much light on the subject of hybridization, and has furthered and made more acceptable the great principle of evolution. It was formely thought inconceivable that any advantage could accrue to a plant from having its pollen ripen at one time and its stigma at another, or that the various forms were adaptations for securing the services of the insect needed for its proper fertilization, or contrivances for hindering those which would not be useful.

But nature never works without an object, each strange shape though seemingly useless has a purpose and recent investigations have brought forward facts and proofs which cannot but enforce conviction.

Careful study has revealed to us that flowers are complicated organisms in which it is absolutely essential that each function works with the greatest accuracy and that no part of the structure becomes unfitted for its office. The relative position and shape of the parts, the friction and viscidity, the elastic and hygrometric movements, all nicely balanced, play each an important part. So too in the structure, a definite function belongs to the apparently most insignificant modifications of the individual parts of flowers, as for example the special arrangements of the orchids and the clover to allow useful insects to visit them, or the hairy, viscous glands of the veronica and asclepias to prevent the approach of those which are unwelcome.

All the various peculiarities, as color, odor and singular form, are directly subordinated to the use of insects. Their duty, indirectly perhaps, being allogamic, or the fertilization of flowers with pollen brought from another plant. That their assistance is essential to the fertilization of plants we must infer from the innumerable contrivances serving this purpose, and the fact that many are absolutely incapable of being fertilized in any other way. The secretion of honey, the protection of it from the action of the rain, the beautiful colors of the corolla, the delicious fragrance of many varieties,—all these are contrivances to aid in securing the perfect fertilization of the plant. The blossoms of the orchids in all their strange and endless variety of shapes are a good example of this. Highly colored flowers like the poppy do not secrete nectar, they are sufficiently conspicuous by their color and they also secrete pollen which is carried away by large numbers of bees, wasps and flies. The mignonette and the heliotrope on the contrary, which are subdued in color, contain a large amount of honey and are very fragrant. Most flowers, fertilized by nocturnal insects emit their odors most powerfully in the night.

Blossoms which have no object in attracting insects or which need only a certain kind, have their structures modified accordingly. Frequently the androecium or stamen roofs in the nectariferous glands at the base of the corolla and thus makes a closed cavity.

Sometimes the peduncle is covered with hairs or viscid glands to keep off all but flying insects. At other times the flower is bent or dilated or crowded together, preventing the access of all but the proper insect. The first and most important conclusion which may be drawn is, that the prime cause determining the form of flowers is not, as some naturalists assert, an innate tendency in all things to vary, but that it is the necessity of various adaptations for cross fertilization. This explains the apparent anomalies in their structure. A powerful impulse for further research has been given by the writings of Sprengel, Darwin, Knight and Muller, but the veil of secrecy is far from lifted, only a few highly gifted minds have penetrated the dim vistas beyond. Of the mechanism of movement and the motor impulse we know but little. We are as yet only on the threshold of a science where a thousand different doors are opening into the broad avennes of nature all ready to yield to the ardent student eager to become aequainted with her wondrous plans.

BALLADE.

I.

My love oft walks at even along the forest ways :
The birdlings sing, the crickets trill within the forest maze,
The moonlight gleams, the stars shine out, the vision-haunted night.
The wind-blown woodland greets my love with shadows of delight.

II.

My love oft sings at even, the birdlings all are still,
The brooklets catch the melody, the ever-murmuring rill.
And as the sweet sounds echo o'er fields and dale and lea,
The woodland spirits sing the song that my love sings of me.

THE MONASTIC ORDERS.

Monastic life, taken in a large sense, is historically interesting as the expression of a most important era of human culture. We are outliving the prejudices which represented the life of the cloister as being from first to last a life of laziness and imposture. We know that but for the monks the light of liberty and literature and science had been forever extinguished, and that for six centuries there existed for the thoughtful, the gentle, the inquiring, the devout spirit, no peace, no security, no home but the cloister. "There learning trimmed her lamp; there contemplation pruned her wings." There the traditions of art, preserved from age to age by lonely, studious men, kept alive in form and color the idea of beauty beyond that of earth, as Tennyson describes a mystic: "Angels have talked with him, and showed him thrones. Ye knew him not, he was not of ye." The founders of the various religious communities were all remarkable men; some of them were wonderful men, men of genius, of deep insight into human nature, of determined will, of large sympathies, of high aspirations—poets who did not write poems, but acted them. Some of the founders were noted for particular virtues. One of these was charity. To understand and sympathize with the importance attached to almsgiving,

and to the prominence given to this particular aspect of charity in the old times, we must recall a social condition very different from our own, a period when there were no poor laws, and when the lower classes were very little protected. When for the wretched there was no resource but in private beneficence. In those days a man began his religious vocation by a literal and practical application of the text in scripture, "Sell all thou hast and give to the poor." Charitable fraternities performed many duties left to our police. One of the most interesting of these orders is the Benedictines. First, as the early missionaries of the north of Europe, they carried the light of the gospel into the wilds of Britain, Gaul, Saxony and Belgium, where heathenism still solemnized impure and inhuman rites, and as in our time we find companies of speculators constructing railways, partly for profit and partly for expediency, so in those early times we find the munificent and energetic communities clearing the forests, draining marshes, planting, building, although their fields and gardens were often laid waste by the Danes.

In their convents were preserved from age to age the traditional treatment of sacred subjects in art. They were also the depositories of chemical and medical knowledge, and the only compounders of drugs. Besides, we owe to them the discovery and preparation of some of the finest colors, and the invention and improvement of the implements used in painting. As architects, as glass painters, as mosaic workers, as carvers in wood and metal, they were the precursors of all that has since been achieved in Christian art. And if so few of these admirable men are known to us individually or by name, it is because they worked for the honor of God and their community, not for profit or reputation. Theophilis, the monk, whose important treatise on the fine arts and chemistry was written in the 12th century, and lately republished in France and England, was a Benedictine. Friar Bacon and Albertus Magnus attained to such a knowledge of physics that it exposed them to the charge of magic. Shakespeare, in Romeo and Juliet, introduces Friar Lawrence as issuing from his cell at dawn of day to gather herbs and moralizing on their properties. The portrait is drawn with such wonderful skill it seems as if one of the old friars had sat for it. The first printing press in England was worked in the cloisters of the Benedictine abbey at Westminster. Some of the monks were devoted to music. St. Dunstan, as Bede says, "constructed an organ with brass pipes, filled with air from the bellows, and which uttered a grand and most sweet melody." Guido Arteno, the inventor of the modern system of notation in music, was a monk. Oratorios, the most beautiful of modern musical compositions, take their name from being first performed in the oratory of St. Philip Neri at Rome. Palestrina, the great musician, composed his most famous works for this order. The order of Dominicans is glorious in the history of art. They produced from their own community two of the greatest painters who have drawn their inspiration from religious influences, Angelico and Bartolomeo. It was said of Angelo that every picture he painted was an act of prayer. Giotto, Titian, Del Sarto, Cimabue and Rubens painted for the Franciscans their most beautiful pictures. When Murillo returned from Madrid to his native Seville, poor and unknown, the Franciscans were the first to patronize him; he painted for them his most beautiful works, and thus laid the foundation of his future fame. For this order da Vinci painted his famous Last Supper. At the convent of St. Just, near Florence, the friars carried on an extensive manufactory of painted glass. Vasari, in his lives of the painters, has given a most picturesque description of this convent, the industry of the friars, of their laboratories, their furnaces and distilleries, their well ordered garden, where they cultivated herbs for medicinal purposes, and the vines trained around the cloisters. A poor Spanish monk was the first to establish a hospital, an institution which the Greeks and Romans, with all their civilization, were without.

Before the invention of printing every convent had its library, where silent monks were employed from day to day in making copies of valuable works, as Longfellow describes them in the Golden Legend.

We are indebted to them for the preservation of many classical remains of inestimable value, for almost the whole of Pliny, Sallust and Cicero. It is said some of them were chided for spending too much time on a Virgil or a Horace.

They were the fathers of Gothic architecture.

They were the first agriculturists who brought intellectual resources, calculation and science to bear on the culture of the soil; to whom we owe experimental farming and the introduction of a variety of new vegetables and fruits. Wherever they carried the cross they also carried the plough.

They either founded or preserved the most eminent schools of Europe. Thus they were the farmers, the thinkers and writers, the artists and schoolmasters of mediæval Europe. M. Guizot gives us in his "Reign of Charlemagne," a "tableau" of the celebrated men in his service as ministers, councillors and secretaries, and they were all monks.

EMBRYOLOGY.

The study of embryology is one of the most important in the whole round of natural history. Although the subject of the metamorphosis of plants and animals has been regarded with much mystery, the facts are now as well understood as any other branch of physiological inquiry. The greatest mystery is the reason of the assumption of a particular form from what appears to be the same combination of elements, without the slightest appreciable external difference. Why the one set of cells will develop the form of one species of animal, and the other set another species. The history of the development of animals shows that all commence their existence under the same form, a simple protoplasmic body, the ovum or germ. All start from this common morphological type. The various parts and organs in the same individual are exactly alike during the early embryonic period, which in the adult become so widely different. The segmentation of the vitellus and the formation of the blastodermic membrane takes place in essentially the same manner in all classes of animals. The egg always commences its development in this way, whether it is destined afterward to form a bird, a fish, or a man. The peculiarities belonging to the different species, show themselves afterward by variation in the manner and extent of the development of the different parts. This blastodermic membrane produced by the segmentation of the vitellus, separates into two layers, an external and an internal. The internal forms the intestinal canal, the external, the spinal column, the skeleton, and the organs of special sense. This is one of the most remarkable and important of all the changes taking place during the development of the egg. All the phenomena are clearly under the influences of chemical and physical forces. The simple globular mass of the vitellus composed of albuminous matter is converted into an organized structure. All the future organs of the body, however varied and complicated in structure, arise from it by means of modification and development of its different parts. We are far from being acquainted, as we may by and by hope to be, with the chemical phenomena of living beings. We know that the ordinary laws of hydraulics govern the circulation of the blood, and that all the complex visible motions of the body are executed in accordance with the laws of mechanics, and we also know that the operations of the eye and ear are purely physical. Th. exchange of the carbon dioxide of the blood with the oxygen of the air, is in strict obedience to the laws of diffusion of gases. But what is the combining power between the cells which causes them to grow together? Whence the action of the vital principle? This is still an unanswerable question.

The proeess of embryonic development is a suc cession of changes in which the structure and organization of the young animals are adapted to different modes of existence in which different organs and apparatus appear and disappear, or replace each other in the proeess of growth, and give rise to transformations which affect the body as a whole. The limbs, at first, are mere rounded forms, without distinctness of parts or articulation. The feet of a bird or the web of a frog have originally the same form. The wing of a robin is at first a fin. All the organs of locomotion have this similarity. It is the same with regard to the formation of the lungs and heart. So complete is the resemblance in the mode of formation of the head and trunk that the two embryos may be reptiles or mammalia. The wings and feet of birds, no less than the hands and feet of man, all arise from the same fundamental form. As a general result of the observations which have been made up to this time on the embryology of the various classes of the animal kingdom, especially of the vertebrates, it may be said that the organs of the body are successively formed in the order of their organic importance, the most essen-

tial being the first to appear. In the fish, for example, the first changes relate to the formation and furrowing of the germ, which is a characteristic common to all classes of animals. It is not until a subsequent period that we can trace the dorsal groove, which indicates that the forming animal will belong to the vertebrates. Later still, the intestines are formed, fins become evident, and the organs of respiration acquire their definite form, thus enabling us to distinguish with certainty the class to which the animal belongs. Finally, we have the teeth, which mark the genus and species. During almost the whole of embryonic life, all that can be predicted is that the unfolding germ will become an animal. The class and group are not indicated. Heat, light, nourishment, and other influences, affect the germ. Many insects are not hatched till a certain external temperature takes place. Plants will not produce leaves without light nor will tadpoles become frogs. The ordinary bee becomes a queen by the specialty of its food. The dog, the pig, the horse, and even man himself presents varieties which are dependent on external circumstances. Embryology derives great importance from its relations to zoology. Up to the time of Cuvier's death in 1831, microscopic investigation was in its infancy, and hence the great majority of the lower forms were either unknown or little understood. It was only in the present century that Dollenger and Von Baer commenced that wonderful series of researches into embryology, which developed into a science. That all life came into existence by the gradual modification of primordial living matter, and that all animals, however diversified, had a common origin, embryological evidence compels us to believe, and this has found general acceptance among scientists of the present time.

CHANSON.

I.

The fields are full of daisies,
  And maple leaves are young,
The olive thrushes warbling,
  Their sweetest songs they sung;
And in the purple gloaming
  Ere yet the stars appear,
My love is coming o'er the wold,
  My true love, my dear.

II.

Like sound of merry children
  A-laughing in their play,
That glad voice-echo comes to me
  From-o'er the stone wall gray.
Ah, still my heart, be silent,
  You do not wait in vain,
For in the fading golden light
  I see my love again.

A FEW OF OUR BIRDS.

Rose liquor and the wild grape wine
Had filled his soul with song divine.

Who has not felt after reading the charming gossip of old White of Selbourne like keeping a record of all the delightful things that happen in the bird and insect life around "Aggie Farm?" Walks in the fields and woods at all seasons cannot fail to be of interest to the young ornithologist and a journal such as Gilbert White kept would be of great pleasure in after life. Inspired by him let us go out this summer morning. Passing along the road, the first things we notice are small flocks of young chipping sparrows, with speckled breasts, that start up from the borders of the road, with the sharp chirp peculiar to many of our native sparrows. Upon fence-rails numbers of barn and white-bellied swallows are sitting socially in long lines, from which individuals are continually departing in pursuit of their insect prey. Turning from the road down "Lovers' Lane" we pass through the old wood. The morning is fine, with clear sky, gentle westerly breezes, and a soft haze in the atmosphere, which tints the surrounding hills. A robin sings loudly from the top of a dead tree and down by the wall we hear the familiar note of the song sparrow. The goldfinch passes overhead, now bounding forward with his usual intermittent note, and now, rising with fluttering wings, pours forth his full melodious song. Near us in the orchard we find a party of young bluebirds, in their blue and speckled plumage, who, together with some young king birds, are busy picking up their morning meal, while in the distance the old king birds are seen pursuing a sharp-shinned hawk. It is noticeable, however, that they do not attack him, as they would have done when their young were helpless in the nest, but content themselves with merely seeing him out of the neigh-

borhood. As we watch the young king birds turning their heads in different directions gazing on flying insects, utterly beyond our powers of vision, as we mark the fluttering but powerful flight which follows to the death of the flying beetle, we remember that one of these king birds upon being killed had about 30 freshly killed specimens of a grapevine beetle in its stomach.

Faintly now from the eastern hills is heard the tremulous far away note of the upland plover, which has come down from its breeding ground to feed among the hills and pastures. Now clearer, and now passing away in the distance, it seems at first a mere wandering voice in the air, yet a search in the high pastures and fields will soon reveal flocks of them, always watchful and away at the first suspicion of danger. As we go down into the meadow, the meadow larks show us by voice and action that they have broods hiding in the grass. Here we find our old friend the bobolink, who sings so jolly in June.

This is one of our species the male of which changes his plumage twice a year. The indigo bird undergoes the same change. A search in the meadow reveals a Henslow's bunting, while near by may be found a yellow-winged sparrow. These two birds are about equally distributed in this locality, neither being common. The note of the yellow-wing resembles the faint chirping of the grasshopper, while the other seems to have no real song. Both birds are of neutral tints, being much alike, and are rarely noticed by the beginner in ornithology. They pass the winter in Florida and Central America. Following the brook as it enters the wood we hear mingled with its murmuring, the notes of the red-eyed vireo. Watch him flit through the sunny space above the pool, catching his winged prey. There in an opening, darting about a decayed tree is a young ruby-throated hummingbird, flitting to a branch he hangs as if suspended, while he thrusts his slender bill again and again against the tree, evidently for the purpose of gathering small insects from the bark.

These insects gathered from flower, plant, and tree, form probably a larger proportion of his food than the nectar of the flowers. Leaving the woods and coming out on the road again, we near the cellar of what was once a farm-house, near which some old lilacs are growing.

Hopping among the branches are our old friends the song-sparrows. He is not one of our winter residents; but he is our earliest regular visitor in in the spring. About the middle of March, when the fields are beginning to be green on the southern slopes of the hills, when the wind is calm, and the sunshine sleeps quietly under the still, leafless trees, we are sure to hear the few sweet notes of the song-sparrow. During all the months of the year except winter, whenever at any day or hour there is a lull in the melodies of the garden and orchard, this little songster tunes his slender pipe, and makes the very silence charming. Though they are always near us, they are quite unassuming in their habits.

Notice these little fellows in clear and pleasant weather and observe that the few, simple notes he utters are a theme of which he makes six variations. He is a little artist, and with his few notes warbles a theme having an allegro, diminuendo and finale. But he does not give them in any regular succession but constantly transposes them. It would seem as if certain moods of his mind prompted these variations.

And now we resume our tramp, and enter the swamp bordering the pond. Down through the low pastures young robins and woodpeckers chirp; from the hillside thicket comes the distant cry of the cuckoo. Overhead, high in the air, crows loudly resent our intrusion. Along the shore of the pond runs the spotted sandpiper. The day breeze is spent, and the dreamy hum of insects fills the night air as the whippoorwill flits by in pursuit of the great night moths.

COLLEGE ATHLETICS.

Whether on the farm or in the shop, no man ever regrets any endeavor he makes towards gaining a strong and vigorous constitution. The trials and cares of daily life are many, and those with sound bodies and quick and clear movements, are the ones who surmount them, and there is not any better time to secure these essentials than while the body is maturing. We constantly see wherever we go, persons of strong and well-founded bodies actively at work among the toils of daily life, and you

will find the majority of them to be persons who from early boyhood have taken systematic exercise.

Is it not essential then that college students should form this habit? They are generally the ones who need this system of training, or at least need something that will arrest their minds from books, and will at the same time not tend to lower them in the essential of all essentials—character.

What is better than a well regulated gymnasium? Surely there is not a single college in the world, even the farmers' colleges with all their military training, but what should have one. Many a student says: "Oh! if there was only a gymnasium here." We have a vast amount of talent which lies undeveloped. Our men come back from their homes in the fall, strong sunburned fellows, but generally lacking the quickness of motion. Had these men a well equipped gymnasium placed at their disposal during the winter, we would not only see "Aggie" an active participant in out-of-door games, but from her fold would go out men even better fitted for life than now. It is sincerely hoped sometime not far distant this essential factor will be established.

THE ROMANTIC ELEMENT IN AMERICAN HISTORY.

We have no "legends of the monkish page, traditions of the saint and sage, tales that have the rime of age, or chronicles of eld," yet history affords no subject more powerfully dramatic than the events recorded in the first centuries of American history. What splendid materials for tragedy and romance—for a Shakespeare or a Scott, in the characters, passions, incidents and wild vicissitudes in our early history! Columbus, the lofty-minded and determined. The fierce, implacable Indian. The ambitious French and Spanish adventurers; the devoted and faithful missionaries; the dignified and beautiful women of the revolution.

What a group to be brought together within the same canvass! What variety, brilliant contrast, light and shade! What capabilities of scenery and costume in the country, the manners, the age! First we find ourselves in the legendary lore of those children of nature, the Indians. A few centuries hence and they will be no more, living only in literature. The sweet song of Minnehaha, the West-Wind, and the brave deeds of Hiawatha remain to tell us of their fates, banished before the new civilization. The mysterious peace-breathing calumet, fringed with the eagles' quills, is no longer held out to the white man, departed to the region of the "big sea water." The Indian seemed peculiarly appropriate to the American scene. When in the springtime the clamor of the wild geese is heard and the bluebirds appear in the naked woods, the water willows are clothed in their down-like blossoms, the twigs of the swamp maple are flushed with ruddy bloom, the white stars of the blood-root gleam among the dark fallen leaves, and in the meadows the marsh marigolds shine like spots of gold; then we associate the dusky form of the red man with nature. They rise from their graves in strange majestic guise, again their ghastly campfires seem to burn, and in the whispering pines we seem to hear their voices.

In Europe, America was a land of wonder, the ancient spell hung unbroken over the wild, vast world beyond the sea. A land of romance, of adventure, of gold.

Thence came the characters whose illustrious achievements and deeds of daring have made our history the rival of fabled antiquity, and clothed reality in all the brilliant colors of romance. Through the old woods wandered Ponce de Leon, a veteran cavalier, whose restless spirit age could not tame.

Thirsting for glory and gold, he climbed unknown mountains, surveyed unknown oceans, and pierced tropical forests to find the El Dorado where old men renewed their youth.

What visions haunted the brain of De Soto and Cortez, seeking to find another temple of the sun, encircled with a frieze of gold. Almost obscured by these brilliant colors are the shadows of the Jesuits. They had disputed in theology with the Bonzas of Japan, and taught astronomy to the mandarins of China, wrought prodigies of sudden conversion among the followers of Brahma, preached to Abyssinian schismatics, carried the cross among the savages of Caffraria, and gathered the tribes of Paraguay beneath their paternal sway. Would they be wanting in America? Would their footsteps falter in the thorny path that led to martyrdom? No! They were led by the Pére Menard, a scholar,

linguist and controversalist, potent with the tongue and with the pen, commanding in presence, eloquent and persuasive in discourse. He brought with him men steeped in antique learning, pale with the close breath of the cloister. Here they spent the morn and evening of their lives, ruled the savage with a mild, paternal sway, and stood serene before the most awful shapes of death. From this beginning, so full of thrilling interest, there has developed a series of wonderful events, so replete with daring and courage as to almost challenge belief, and yet so amply attested as to defy incredulity. The woods, rocks and hills are invested with new romance fast passing into the cloudland of tradition. From the Dismal Swamp of the South with its weird tales of slave life, to the cliffs of the North with heroic memories, where fiery Frontenac fought and Wolfe, Montcalm and Montgomery fell.

How the names of Marion, Montcalm and Sumpter and a host of similar daring spirits have brought the misty forms of the realms of fancy out into the sunlight. The heroes of the ancient poets walk the firm earth before us, not draped in poetic mystery, but in garments of reality. After the arrival of the haughty knights and fierce soldiers, men who knew no arts but those of war, and courted no glory which was not sown and reaped in blood, came the Puritans in lowly garb and peaceful guise, overlooked, unheeded, abandoned by the great, derided by the humble, yet bearing on their serene brows the stamp of greatness. From these sprang the men "by heaven designed to break the chains that bound half mankind." Adams, and Henry, Franklin and Jefferson. We need no longer read the lives of Cornelius Nepos, Diogenes or Plutarch, for examples of sublime virtue, or incitements in the path of duty; as seen in the dim distance of primeval time they appear vain and visionary compared with those examples of a later day.

Beneath their formal manners and stern appearance ran a deep vein of humor, as we see from the courtship of Miles Standish. One of the most mysterious events of the early times in New England was the Dark Day. One old lady composed some verses during the night—"As for ye month, it was in Maye, and fell upon ye nineteenth day, ye darkness held till almost night, and then again it grew more light. But it to me was a true marke, To show ye blackness of men's hearts. For when ye Lorde withdraws his grace and light, Man's hearte is then as black as night."

About this time old Cotton Mather had a vision which he said was undoubtedly true, so he writes in his Magnalia Cristia and in Longfellow's Rhyme

A ship sailed from New Haven,
And the keen and frosty airs
That filled her sails at parting
Were heavy with good men's prayers.

"O, Lord, if it be thy pleasure,"
Thus prayed the old divine,
"To bury our friends in the ocean,
Take them, for they are thine."

But Master Lamberton the captain muttered,
And under his breath said he:
This ship is so crank and walty
I fear our grave she'll be."

And the ships that came from England
When the winter months were gone,
Brought no tidings of the vessel,
Nor of Master Lamberton.

This put the people to praying
That the Lord would let them hear,
What in his greater mercy
He had done with friends so dear.

And at last their prayers were answered;
It was in the month of June,
An hour before the sunset
Of a windy afternoon.

When steadily steering landward,
A ship was seen below,
And they knew it was Lamberton,
Master who sailed so long ago.

On she came with cloud of canvass,
Right against the wind that blew,
Until the eye could distinguish
The faces of the crew.

Then straightway fell the topmasts,
Hanging tangled in the shrouds,
And her sails were loosened,
And blown away like clouds."

"THE STAR-SPANGLED BANNER."

Although we are all familiar with the words and music of the "Star-Spangled Banner," perhaps we are not all of us acquainted with the time and pecu-

liar circumstances under which the piece was composed and set to music.

It was in 1814, during the second war for independence. Admiral Cockburn had made depredations along the eastern shore of Maryland; then there followed the sacking of Washington; the battle of North Point; the attempt of the enemy to take the city of Baltimore by water; and on Sept. 13 the bombardment of Fort McHenry.

Frank Key, the author of this poem, was a soldier, and at this time a prisoner on Admiral Cockburn's fleet, and consequently a witness of these various misfortunes to his country's cause. Soldier that he was, and surrounded by such circumstances he could not refrain from that grand outburst of patriotism in verse.

At this time there was a regiment of infantry encamped in Baltimore, for the protection of the city against the fleet of the enemy, as a second attack was expected at any moment.

In this regiment were two brothers, Charles and Ferdinand Durang, both play-actors, and to Ferdinand Durang we owe the music which accompanies Frank Key's words and which is so sweet to our ears.

For three months the regiment waited for an enemy that never came, and to relieve the monotony the men began to look about for amusement. It was during this time the music was set to the words of the "Star-Spangled Banner." One of the regiment relates the circumstance in the following words:

"Have you heard Frank Key's poem?" said one of our men, coming in one evening, as we lay scattered over the green hill near the captain's marquee. It was a rude copy, and written in a scrawl which Horace Greeley might have taken for his own.

He read it aloud once, twice, three times, until the entire division seemed electrified by its pathetic elegance, and then an idea seized Fred Durang. Hunting up an old flute-book, which he found in one of the tents, he impatiently whistled snatches of tune after tune just as they caught his quick eye. One called "Anacreon in Heaven" struck his fancy and riveted his attention; note after note fell from his puckered lips, till with a leap and shout he exclaimed, "Boys, I've hit it!" and fitting the tune to the words there rang out for the first time the song of the Star-Spangled Banner. How the men shouted and clapped, for never was there a wedding of poetry to music made under such inspiring circumstances.

Getting a brief furlough the brothers sang it on the stage of Holiday Theatre soon after. It was caught up in the camps and sung round our bivouac fires, and whistled in the streets, and when peace was declared and we scattered to our homes, carried to thousands of firesides as the most precious relic of the war of 1812.

Ferdinand Durang died, I do not know where, and Francis Key's bones lie in the cemetery at Fredericktown; but I guess that song will live as long as there is an American boy to sing it."

CYCLE SUPPLEMENT.

The CYCLE Supplement will be issued as usual at the close of graduation exercises Tuesday morning. It will contain a complete account of Commencement excerises, the list of prizes, and other interesting matter. Do not fail to purchase a copy. Price two cents.

LOCALS.

Hatched.

But not by incubators.

Fertility without futility.

Baker of Saratoga is '85's class photographer.

The Senate vote on the college bill stood 21 to 2.

E. S. Chandler of '82 matriculates at B. U. with '85.

Lovell has taken some very fine views of the ruins.

"Hey" is not so common an article about college this spring.

We learn that the Smith Seniors cherish their Aggie "memorabilia."

The Lieut. closes his labors at the college at the end of the present term.

Adam and Eve, it is said raised Cain. For the sake of company of course.

The graduates of '85 are ten in number. All matriculate at Boston University.

Tennis is as popular as ever this spring. Three courts are in almost constant use.

P. C. Brooks formerly of '85, graduated at Dartmouth (Agricultural Department) this year.

Senior vacation was of ten days duration, but military exercises *must be attended*, just the same.

Both the Freshmen and Sophomores gained easy victories over the High School at base-ball recently.

The Seniors will have the pleasure of attending at least three receptions at Pres. Greenough's this term.

A great deal of sympathy is expressed for the "Amhersts" in their poor success at base-ball this year (?)

In Senior year we smoke cigars and break hearts! So says one whose experience may well justify the assertion.

J. E. Goldthwait represented the Senior class at Boston University, June 3. His subject was "The Power of ideas."

"Our military friend" among the Legislators was exceedingly enthusiastic, and called forth many rounds of applause.

We welcome our old friend T. E. Smith of '76 as instructor of the Farnsworth and Senior speakers for Commencement.

The Juniors have made some very interesting excursions under Prof. Clark, for the purpose of studying the geology of the region.

Riley-town, where once a solemn stillness reigned, has become a noted rendezvous. Two eighty-five men have held forth there during the present year.

Dr. M.—"With what implement would you finish the ditch for tile-draining?"
Mr. A.—"A tea-spoon-shovel, sir."

A lengthy military aspect: *Lieut.*—"Mr. Watson, I would not get in there; you will spoil the picture;—so far as the military aspect is concerned.

The Juniors have set out a large group of trees on the edge of the ravine, the ceremonies attending the same were followed by a grand "spread" at Wood's.

The Juniors made a trip to Turners Falls with Prof. Clark a short time ago for the purpose of studying the interesting natural phenomena, there found.

Professors Warner M. A. C. and J. H. Washburn of Storrs Agricultural School, Ct., start for Germany June 20th for a few months study in that famous land.

Prof. Maynard has about thirty new varieties of seedling strawberries, three years from seed, some of which promise to surpass all others in earliness of ripening.

H. P. Rogers of '88 who has been seriously ill for nearly two months is slowly recovering. He was removed June 11 to Mrs. Smith's, on South Prospect street.

The unanimous vote given the college bill in the House was a personal compliment to Professor Goodell, and one such as is seldom received by a Representative.

Prex.—Will you be at liberty to rehearse this afternoon T-l-r?
Mr. T.—Well—yes.—If I could get off from military.

The written examination for the Grinnell prize occurred Wednesday, June 10th. The subject was Rotation of Crops. The oral examination occurs this P. M. at 1-30 o'clock.

The Drill hall will once more serve for Commencement exercises. Owing to the death of Contractor Beston work on the Chapel was delayed so that it could not be made available.

The college boarding-house was never run in a more shiftless manner than during the past two years. We think if the college is going to do anything here, it better be "well done."

The military essays went to West Point this year. A very congratulatory letter, on the work of the Seniors in this connection was received from the board of examiners, on the return of the essays.

Seldom has the college farm looked in better condition. With the abundance of manure applied during the past year and the bounteous supply of rain of late, the grass land promises a heavy yield.

The Juniors have made numerous geological expeditions this spring. Probably their most remarkable discovery is the place where three bottles of birch beer and a pie can be bought for fifty cents.

No powder has at this writing been received for the Commencement drills. It has been delayed for about two months in New York. Some means of evading the law must be found before it can be transported.

Prof. W.—"Mr. A., what is the name of this machine?"
Mr. A.—"The Holtz machine, sir."
Mr. E.—"Is he the same manufacturer who makes the famous revolvers?"

Eighty-five's class tree succumbed to the inevitable when ground was broken for the Chapel. Nothing daunted by the loss, a new group of cut-leaved birches was set out south of the Drill hall, a few weeks ago.

Since the burning of the South Domitory the students have been somewhat scattered, some taking up their abode in the center of the town, others finding rooms in private families on or near the college grounds.

Doctor and Mrs. Miles gave a very pleasant reception to the Senior class a short time ago, followed a week later by one to the Juniors. Such occasions are always looked forward to with pleasure as a most enjoyable time is invariably realized.

Eighty-two are making preparation for a grand reunion. A neat circular has been sent out by W. E. Stone to which there has been a pretty general response. At least two-thirds of the graduates are expected to return to this, their first formal gathering.

Special attention is called to the advertisement in our columns of two physiological works by Dr. J. A. Cutter of Japan. They are the first books published by an Alumnus of the college and are being largely introduced into the schools of Japan.

The absence of Prof. Goodell for the past two terms has, in various ways, been quite a loss to the college, but what is lost in one direction we feel will be more than counterbalanced by gain in another. When with renewed zeal he returns to his old accustomed post he will be welcomed by all.

Eighty-seven has done a fine job by "trimming up" the fountain plot, setting out flowering and foliage plants and otherwise beautifying the general appearance of the grounds. The new horse lawn mower, recently purchased by the college, will greatly facilitate keeping the lawns in fine condition.

The recently published Biographical Record of the class of '78 is a complete and interesting pamphlet. Being the first of its kind it certainly brings credit to the class. It comes from the pen of Dr. Frederick Tuckerman. Would that all earlier classes might adopt a similar plan of giving to the world their history.

The recent harsh articles published by one of our Western Massachusetts dailies on the worth of the college soon fizzled to an ending when a thorough inspection of the college was made by one of its editorial staff. It almost invariably proves the case that the newspapers opposing the college most strenuously are the ones least acquainted with its workings.

Criticisms by college papers we are aware are generally thought unworthy of consideration. While we would refrain from inculpating any individual yet we cannot but feel that the negligent manner in which the Juniors have been allowed to deal with the matter of orations is worthy of condemnation. During the past two terms, the time in which most classes have been required to write and deliver four and sometimes six orations each, they have escaped with barely two apiece. In a college where foreign languages occupy but a limited portion of the students' time English should certainly receive the highest attention. Judging from general appearances we should say that English composition *ought* to take a leading position in a college like this.

"Woodside" is a noted resort at M. A. C. Here amid majestic trees, on shady lawns, where miles of beautiful scenery can be enjoyed, the Smith seniors or e'en now and then an Intellect delights to stroll. Once a wilderness, here (in this vicinity) the molding hand of man has caused delicious fruit trees to give their increase and even the Freshman are at times prone to linger and leave this hallowed spot with reluctance. But, alas! A chameleon like canine claims his sway over the famous region. The Freshman's hopes are blighted, and the Senior must now approach with gentle tread, the sacred sanctum.

The athletic sports here have been few this year. Considerable interest was shown last fall in foot-ball, but little was accomplished. "Aggies" ideal seems to be lawn tennis, and we have some fine players. There are at present three courts on the ground, and there is hardly a day passes but what they are the scene of many interesting games.

Base-ball at the present writing is having its turn The following is a list of games played:

May 16.—'88 vs. High School; score, 13 to 12.
May 20.—'87 vs. High School; 16 to 8.
June 6.—'88 vs. High School; 13 to 12.
June 8.—Amherst '85 vs. '87; 12 to 7.
June 10.—Aggie vs. No. Amherst; 29 to 13.

But once has an Aggie team been beaten this year.

It is clearly shown that we have stock in this college to do considerable work in all sports, but as long as we are without the wherewithal to train it, we must take a back seat, and be termed, "home-keeping boys, with homely wits."

PERSONAL.

'71.

The appointment of Geo. C. Woolson, for two years a member of the pioneer class, to the superintendency of Central Park, New York City, is well worthy of note. He received his appointment on the merit of a competitive examination, being the successful one of about fifty applicants.

G. H. Allen is one of a successful real estate and insurance firm known as Allen & Caldwell at Winfield, Kansas.

Wm. P. Birnie is still interested in the Birnie Paper Co. at Springfield.

Trustee W. H. Bowker has entered upon his work with great zeal. He has been especially forward in the work of advertising the college.

Lewis A. Nichols is civil engineer for the Boston City Water Works.

Edwin Smead has recently taken a position as instructor in farming and gardening at the Hopkinson Orphan Asylum, Hartford, Conn.

F. Le P. Whitney is a dealer in shoes at Roxbury, Mass.

'72.

B. C. Burleigh is a successful druggist and chemist in San Francisco.

Dr. John A. Cutter will remain at the Imperial College of Agriculture, Sapporo, Japan for the present. His contract as professor has been extended to 1887.

Rev. R. B. Grover, lately acting pastor of the Belleville church, Newburyport, has recently become assistant pastor of the Old South church in Boston at a salary of $2500.

Prof. S. T. Myynard is getting an extensive fruit farm well under way, at his former home in Northfield, Mass.

'73.

Geo. W. Mills is a physician at Medford.

Prof. D. P. Penhallow continues his labors at McGill University Montreal. A series of articles written by him from the *Daily Star* last March, have been revised and published in pamphlet form.

Charles Wellington is expected home from Germany during the summer. He is one of the most promising candidates for the position of assistant chemist.

S. S. Warner is traveling salesman for the Bowker Fertilizer Company, for Western Massachusetts and Vermont. His headquarters are at Northampton where he has a large local trade during the spring months.

James H. Webb is a lawyer in New Haven, Ct., under the firm name of Alling & Webb.

'74.

Edward P. Chandler is a member of a firm of extensive wool growers at Fort Maginnis, Montana.

John A. Hobbs is running a large ranch in Neb.

Harrie Mc K. Zeller is manager of the commercial office of the Baltimore & Ohio Telegraph Co., Hagerstown, Md.

'75.

William P. Brooks is very successful as a professor at the Imperial college of Agriculture in Japan. His contract last December, was extended to 1887.

Madison Bunker is a veterinary surgeon at Newton.

Andre A. Southwick is superintendent of Beach's "Vine Hill Farm" near Hartford.

John F. Winchester is a veterinary surgeon at Lawrence.

'76.

C. W. McConnel who for sometime has been located in Albany has moved his dentistry business to Boston.

Hiram Kendall is conducting an extensive and prosperous soap business in Providence, R. I.

William A. Macleod has a large business as a patent lawyer in Boston.

George L. Parker is a florist in Dorchester.

J. E. Root has a successful practice as a physician and surgeon at Hartford.

Thomas E. Smith entered for the second time into the bonds of matrimony during the past year.

Howard G. Wetmore is a physician in New York City.

'77.

Atherton Clark is clerking at 121 Tremont St., Boston.

Henry F. Parker is a mechanical engineer in New York City.

'78.

Five members were present at the laying of the corner stone of the new Chapel last fall.

Arthur A. Brigham received the highest number of votes cast, for representative of the alumni on the board of trustees.

Edward C. Choate resigned from the Board of Trustees last winter.

Chas. S. Howe was elected to the full professorship of mathematics at Buchtel college, Akron, Ohio, last July.

Prof. J. H. Washburn sails before Commencement with Prof. Warner, '81, for a short course of study in Germany, returning to the Storrs school in the fall.

Dr. Tuckerman proves himself a very competent professor in his department M. A. C.

Hunt, Lovell and Stockbridge have sealed the bands of matrimony during the past year. Lovell since his marriage has formed partnership with photographer Hardie of Northampton, under the firm name of Hardie & Lovell.

'79.

Samuel B. Green closed his labors at Houghton Farm in April and is now foreman of an entensive nursery at Newton Highlands, Mass.

Chas. Rudolph is a lawyer in Mitchell, Dakota.

Walter A. Sherman has built up a very successful practice as a veterinarian in Lowell.

R. W. Swan is a physician in Worcester with a large practice.

'80.

F. E. Gladwin made the college a flying visit, a few weeks ago, just previous to his return West. He is located in Arizona.

L. K. Lee has been clerking in Boston most of the time since his return from the West.

'81.

W. F. Carr since graduating at the Institute of Technology has become assistant professor of physics and civil engineering at the University of Minnesota.

H. E. Chapin called on his old friends at the college last winter.

Boonzo Hashiguchi has had a very successful year in the beet sugar industry under the government of Japan.

J. L. Hills is assistant chemist at the New Jersey experiment Station.

Elmer Howe is a successful farmer in Marlboro.

Austin Peters is studying at the Royal Veterinary college in London.

H. F. M. Smith graduates at the Harvard Medical School June 24th.

'82

Are making preparation for their first reunion.

F. S. Allen, House Surgeon. American Veterinary college, New York.

C. E. Beach has general supervision of his father's extensive stock farm near Hartford.

E. S. Chandler gradnates from Harvard Law school June 24th.

David Goodale is a successful farmer at Marlborough.

C. D. Hillman is a nurseryman in Fresno City, Cal.

B. A. Kinney continues his services with the Signal Corps.

F. G. May is growing oranges in Florida.

A. F. Shiverick started for Swan Island in the Caribbean sea in April and will probably not return until July.

W. E. Stone has supervision of the field experiments at the Station besides working to a considerable extent in the Laboratory.

W. H. Thurston entered the experimental depart- of Houghton Farm last fall.

J. E. Wilder is still connected with the leather firm of Wilder & Hale at Chicago.

L. R. Taft is reported as being well pleased with his new position at the Missouri Agricultural college.

'83.

E. A. Bishop has accepted the superintendency of the Farm of the Talladega college, Alabama. Alabama.

D. H. Braune is "building up" an extensive dairy herd in Brazil.

A. H. Hevia has taken an agency from the New York Life Insurance Co., at Guatemala, Central America.

The engagement is announced between S. J. Holman and Virtue Swift both of Attleborough.

J. B. Lindsey is quite successful in his new business, as agent for the Darling Fertilizer Co.

D. O. Nourse made the college a visit but a short time ago.

C. H. Preston is with Dr. B. F. Davenport, State Analyst, 161 Tremont street, Boston.

H. J. Wheeler continues to be a valuable auxiliary in the Experiment Station.

'84.

E. A. Jones is still unable to engage in severe manual labor.

L. Smith entered the employ of the Station as assistant chemist last March.

THE CYCLE.

SUPPLEMENT.

JUNE 23, 1885.

Containing an account of the Exercises of Commencement Week, List of Prizes, Etc.

COMMENCEMENT EXERCISES.

The Drill hall, which was obliged to be used again for Commencement exercises, and the Chapel were very appropriately trimmed for the various exercises, which thus far have passed very pleasantly and successfully.

The slumbers of last Friday night were disturbed by the usual clamor and din of "Freshman Night.', Firing of cannon, shouting, ringing the bell, and a bonfire constituted the program.

For the past week or two the drills have been held before breakfast and before supper, proving very beneficial as appetite sharpeners,—not alone for the students.

The music for the various exercises has been very acceptably furnished by the Orchestral Club of Holyoke. The principal and striking feature of the Club was the two female violinists, whose solos were received with much admiration.

The President delivered his baccalaureate sermon to a large audience, Sunday morning.

Sunday evening the venerable preacher Dr. A. P. Peabody, of Cambridge, delivered a most appreciative address before the College Christian Union, choosing as his subject, "Moral and Spiritual Beauty," or "the Beauty of Holiness." He illustrated his text by graphic descriptions of many of the celebrated paintings in Europe, and by microscopic studies of our own and Christ's life, saying: I am not alone, for my father is with me, and that we must take the the words of Christ as our daily watchwords, and thus by closely and deeply applying them we can see the finer lines and richer hues of spiritual life. The life which we need for our own good and for the good of others, and which is shown in not what we say, or do, or give, but in what we are. In closing he cautioned his audience to be natural, be yourself, don't imitate anyone except Christ, and don't lack independence where conscience is present, for Christian virtue lies in gentleness, meekness, and modesty which make life a heavenly one.

The "strawberry patch" proved very agreeable to a large number of students and alumni. "It was the occasion of the Sophomore class testing the different varieties." A good excuse.

Monday morning's drills were "nipped in the bud" by a refreshing shower, but by ten o'clock the clouds had rolled away and everything gave indications of the best of weather for the afternoon exercises.

Yesterday afternoon proved very favorable for the military exercises. At half-past three the "Artillery" drill took place, and was followed by the "Company, Bayonet and Skirmish," that by the "Sabre," that by the "Freshman Competitive," and that by the "Battallion." All passed off very successfully, and reflected much credit upon the department.

Immediately after the drills many assembled at the Drill Hall to listen to the reading of the prize Thesis. The Lieut. opened the exercises with a few remarks, accompanied with the reading of a letter from the Examining Committee at West Point, which spoke very favorably of the work of the Senior class. Mr. I. N. Taylor then read a synopsis of his Thesis, followed by that of Mr. Goldthwait.

The oral examination for the Grinnell prizes passed off very quietly in the mathematical room during the early part of the afternoon, Monday. A printed list of questions was used, most of which we give below. Define agriculture; art and science. Relation of science to the art of agriculture; advantage of a knowledge of science to the farmer. Special applications of biology to agriculture. Physical conditions of the soil in relation to fertility. Pioneer farming—its methods and tendencies; advantages of mixed husbandry. Rotation of crops; practical considerations; application of science. Barnyard manures; care, application and economy

of the same. Soil exhaustion; fertility and condition; nitrification. Principles of drainage; forms of water in the soil. Mixed husbandry. Relation of food consumed to the resulting animal products. Law of heredity. Atavism. Causes of variation. In-and-in breeding. Cross-breeding.

The Farnsworth prizes peaking of Monday was a decided improvement over that of last year, and showed that the speakers had received thorough and energetic training. The programme of the evening was enlivened by excellent music by the Orchestral Club of Holyoke. The Judges were J. E. Wilder, '82, W. A. McLeod, '76, and Prof. Davidson of North Amherst. The order of speakers was as follows:

FRESHMEN:—F. H. Foster, "Courage of Saint-hood;" W. Ayre, "Deathbed of Benedict Arnold;" E. J. Dole, "Eulogy of Lafayette," and W. M. Shepardson, "The North American Indian." SOPHOMORES——J. M. Marsh, "The Last Charge of Ney;" T. F. B. Meehan, "American Slavery;" O. H. Ateshian, "The Infuriated Cannon;" F. S. Clark, "The Polish Boy," and H. J. White, "The Roman Sentinel."

The D. G. K. society held its usual secret session immediately after the prize speaking Monday evening, followed by the annual banquet at Muzzey's dining rooms. About thirty-five did ample justice to the repast. A goodly number of the alumni were present and the toasts were responded to with vigor and elegance. The assembly dispersed at a late hour sallying homeward by the sweet music of the *early* birds.

The Q. T. V. society were very unfortunate in losing their chapter rooms by fire last winter, but the announcement has been made that they are to build a chapter house in the near future. The society held no formal reunion but enjoyed a bounteous spread in one of the member's rooms.

The Phi Sigma Kappa society held an informal reception in its chapter rooms. Frank P. Woods catered for the occasion. Many of the graduates returned to join in the festivities. The occasion was a most enjoyable one to all.

The College Shakespearian Club held a most enjoyable reception in their rooms. Mrs. Gnertin furnished the refreshments and the affair passed off with the usual mirth and humor.

Gov. Robinson and staff arrived on the grounds about 9-30 Tuesday morning, being received with the usual salute. The party soon repaired to the Drill hall preparatory to Commencement exercises.

The graduating exercises commenced about 10 o'clock. A new custom has this year been adopted of allowing all the members of the class that so desired to speak. The following were the speakers and subjects: E. W. Allen, "Success;" G. H. Barber, "Law in Nature;" J. E. Goldthwait, "The Power of Ideas;" L. C. Leary, "The Scientific Method in Agriculture;" C. S. Phelps, "The Progress of Science;" I. N. Taylor, "A Plea for Science in Agriculture;" B. Tekirian, "The Eastern Problem." Messrs. Almeida, Browne and Howell were excused.

The diplomas of the college were conferred with fitting speech by Gov. Robinson, and the Boston university and military diplomas by the president.

To-morrow (Wednesday) morning there is expected to be a large number of candidates for admission, at the Botanic Museum.

The President's reception will occur at eight o'clock this evening at "Woodside."

The prizes were awarded as follows:

Farnsworth Gold Medals—Herbert J. White, '87; Warren Ayre, '88. *Farnsworth Silver Medals*—Osgan H. Ateshian, '87; Francis H. Foster, '88. *Military Prize* for the best essay on the subject "How shall the United States Defend her Seacoasts?" First, J. E. Goldthwait, $25.00; second, I. N. Taylor, $15. *Hills Botanic Prizes*—First, H. Howell, $15; second, L. C. Leary, $10.00. *Best Collection of Plants on the College Farm*, H. Howell, $5.00. *Grinnell Agricultural Prizes*—First, B. Tekirian, $50; second, C. S. Phelps, $30.00. *Freshman Military Prize*—E. J. Dole, $5.00. *Best Room for the Year*—No. 9, L. C. Leary and R. B. Mackintosh, $4.00; and No. 22, G. W. Cutler and H. P. Rogers, $2.00.

MASSACHUSETTS

AGRICULTURAL COLLEGE.

The age in which we live demands progress in the means and the methods by which young men prepare for the duties of life.

The course of study at the Agricultural College is not the result of traditional methods. It recognizes the fact that the sciences are now applied in every department of practical affairs in a larger degree than ever before. The course makes due provision for the teaching of Physics, Chemistry, Botany, Zoölogy, Geology and Mathematics. Since the dead languages are not required, the time devoted to the study of Latin and Greek in many of our higher institutions can here be given to other studies.

The study of the English Language and Literature, and of Modern Lan-Languages, and the frequent exercises in Elocution, furnish excellent opportunities for developing the powers of expression. The study of the Modern Languages also enables the graduate of the Agricultural College to avail himself of the latest scientific results reached by French and German scholars.

But the course is not limited to the Natural Sciences, Languages, and Mathematics. History, Political Economy, and the Science of Government, with special relations to the government of the United States, receive large attention. Nor are those studies in any sense neglected that are adapted to give one a knowledge of himself and of his highest interests, for Mental and Moral Science constitute an important part of the curriculum.

It is the aim of the College to teach every science, as far as may be, in its relations to Agriculture, and to give all the technical instruction in this department that our facilities allow. The ample grounds of the College, comprising nearly four hundred acres, furnish wide and increasing means of illustration and practical teaching.

Physical training and discipline are promoted by the instruction and training in the military department, under an officer who is a graduate of West Point.

In brief, the object of the course is to form the true man and the effective workman.

The expenses are moderate that the advantages of the Agricultural College may be enjoyed by a large number of young men.

Examination of candidates for admission Wednesday, June 24, and Tuesday, Sept. 9, at 9 A. M.

Catalogues furnished upon application to the President.

THE CYCLE.

VOL. VIII. MONDAY, JUNE 21, 1886. NO. 1

Published by the Alepii Chapter of the Φ. Θ. Χ. Fraternity, Mass. Agricultural College.

ORDER OF EXERCISES,

For the Sixteenth Graduation Anniversary, June 20, 21, and 22, 1886.

Sunday, June 20.—Baccalaureate Sermon and Dedication of Chapel, at 10-45 A. M.

Address before the Christian Union, by Rev. A. A. Miner, D. D., of Boston, at 8 P. M.

Monday, June 21.—Grinnell Prize Examination in Agriculture, at 1-30 P. M.

Meeting of the Trustees at the Amherst House, at 3-15 P. M.

Military Drill, at 5 P. M.

Farnsworth Prize Speaking, at 8 P. M.

Tuesday, June 22.—Graduating Exercises, at 10 A. M.

Alumni Dinner, at 1 P. M.

Alumni Meeting at 3-30 P. M.

Reception at the President's house, at 8 P. M.

The Cycle once more plants her banner and permits her colors to unfurl before the critical eyes of the college world. Our doctrines have been expounded in past years; thus it seems superfluous to dwell on such a point. While we feel the necessity of making the Cycle a valuable edition for its literary and scientific productions, yet we have endeavored to add enough of the spicy element to suit all. We hope it will be received with unprejudiced minds and judged from an unbiased standpoint.

Although the history published by Prof. Goodell and Dr. Tuckerman will prove of far greater interest to most of the graduates, yet we hope that our paper will prove worthy of the usual patronage from this source. Feeling that the publication just mentioned would have its influence, we have endeavored to place the Cycle on an equal footing at least with those of past years. Whether we have accomplished this or not we leave for you, alumnus, friend, or brother, to decide.

This is a State institution, and hence is open to criticism from all sides. Many have their views to offer, and nearly all their fault-finding to do. What pains us most is to see the would-be friends of the college (many of them graduates) prejudicing the general public against the college by pouring their personal invectives upon officers of the institution.

If any of the instructors are unworthy of the positions they hold, their workings will soon enough reveal the fact. Changes in themselves are injurious, and should not be made more frequently than necessary.

When a man's writings show clearly that he is only seeking revenge for supposed past wrongs, they can have little weight with any one. It were far better that all such held their peace. A concise statement of facts is valuable for the information it contains; but an article filled with bitter railings against one's personal character, misstatements of facts, and abuses loses the substratum of truth that might otherwise be visible.

Two Western Massachusetts agricultural journals have made themselves conspicuous, of late, by their misstatements, ignorant of facts, and of existing laws. The college receives far less support from the western than from the eastern part of the State, and the adverse criticisms of such journals aid in keeping this small supply at its minimum. Many of the youthful graduates have yet to learn "that notoriety is not reputation." No one can afford to lower the dignity of his calling by endeavoring, by all means, fair or foul, to "boom" his own cause. When criticisms show that the writer has nothing but the good of the

institution at heart, then they will have some weight. Many agricultural journals throughout the State are, and all might be, a medium for the accomplishment of much good for the college.

The statistics of college officers and students, which are to be published this Commencement by Prof. Goodell and Dr. Tuckerman, ought to be in the hands of every person who is at all interested in the college. The book contains more than one hundred pages the size of those in the College Catalog. The first part of the book is occupied with a list of officers of government and instruction; a long list of names, many of them now famous. The book contains the full name and address of nearly every person who ever attended this college, less than thirty out of nearly seven hundred not being accounted for. Biographical sketches of the alumni are a pleasing feature of the book. Among other things are a list of men who have taken prizes in the college, and a summary of degrees and occupations. We have been permitted by the kindness of the authors of the book to publish the latter in this volume. We hope the work will meet with the success it deserves. The names of its authors are a sufficient guarantee of its accuracy, and the facts it gives will be valuable to many people.

It is with very great pleasure that we look upon the growth of lawn tennis in our college. Now that it is organized we look for still greater growth, and hope that soon we shall be able to cope with other colleges on the tennis court. The students of M. A. C. are especially able to prepare themselves in this sport, as they can play all winter in the drill hall. The advantages of making the sport prominent are obvious; it gives training to every part of the body better than any other means except special gymnasium treatment, and our students can much easier train themselves to be good tennis players than to attain great excellence on the base-ball field. But it will not succeed without support. Let every student who has the interest of the college at heart do all he can for the benefit of the Lawn Tennis Association of M. A. C., for we feel sure he will be amply repaid.

A definite course of study has at last been adopted by the Trustees. The question which naturally arises is—Shall it become permanent? In years past no student knew a term beforehand, the studies he would be required to take. The course as laid down in the Catalog has been different every year since 1882. And even this has not been followed. It is better to have something permanent even if it be not complete. The student should have an opportunity of knowing what he is to study that he may plan and systematize his work at the beginning of the year. The course lately adopted seems well fitted to the institution with the exception that no fixed provisions are made for English. With an assured annual income of twenty thousand dollars there seems no reason why this department should not be as well equipped as any. A new professorship should be established. This department has been tossing about long enough. The old adage, "What's everybody's business is nobody's business," is well proven. The plan of forcing upon the professors work outside of their own departments is wrong to its very root. Crowd the professors with such duties, and then expect them to keep abreast of the ever-flowing tide of progress, and they will almost surely fail of securing the desired end. Nothing will discourage a young professor quicker than to crowd him with overwork. The bright hopes that he had of developing himself by personal study or investigation fade from his vision. Concentration of energy is necessary for the highest good of any department. Let each professor devote his effort to his own chosen field, and then, and not before, can you expect the best results.

As is often said, criticisms by college publications are of little value; but when anything occurs to outrage the feelings of the majority of both students and Faculty, it is certainly right that a protest should be made. Such an occurrence certainly did happen Saturday evening, May 22. That any person connected with this college should so far forget his self-respect as to engage in such an action, against the better judgment of the whole college, is scarcely comprehensible. It is our opinion that the students of the other college are capable of making noise enough without borrowing any of ours. The cannon were placed here for the military instruction of

M. A. C. cadets, and they ought not to be lent to every person who feels jubilant and wants to make a noise. There is reason enough for keeping the guns upon the grounds, no matter who wishes to use them; and certainly there can be no good reason for our aiding Amherst College in any of its festivities. How shall we find words to express our disgust at those who are willing to play tail to other people's kite, for the sake of a small stew or a little beer! What must be our opinion of those who desecrated that Sabbath morning thinking they were having a good time! We are sorry when we hear that any one has broken the holy day, but when in doing so they have used something that is dedicated to the far nobler purpose of aiding and inspiriting the students of M. A. C., it arouses in us a feeling of indignation we find it hard to express. The "Aggie Yell" was never before so basely subverted, and we hope it never will be again. Students who lend themselves to any celebration of that kind cannot be too severely censured, and, to put it mildly, it is greatly to the discredit of any one in authority to lend his aid to such an affair.

We are pleased to find that the students are beginning to interest themselves in the Amherst Grange, P. of H. The college needs to be brought into closer relationship with all farmers' organizations. Its road to success lies through the farmers. In organization is power. The power of any organization is felt through its fruits. The college has men and is turning out men every year that can wield an influence of incalculable value through such channels. We already have graduates who hold some of the first positions in the different orders of the Grange. But why cannot we have more? The young and the old are admitted to its membership. Its work is not alone for the intellectual improvement of its members but in a marked degree for their social advancement. Here can be met young men who are just preparing themselves for the duties of life, to whom the advantages of our institution can be presented in a clear and forcible manner.

Let us not hide our light under a bushel, but let it shine through the different farmers' organizations, until its rays shall permeate to the remotest parts of the State. When the Faculty, alumni, and students show a deeper interest in the welfare of the farmers, then will the farmers reciprocate by putting a shoulder to our wheel of progress. Then will a wall of obstacles disappear, and many of the mountains in our passage-way seem as sand-hills.

The college should feel truly grateful toward its legislative friends. Never has there been greater ardor shown toward the institution than during the past two years. And never has there been a better showing for the money placed at the disposal of the college authorities. A new chapel of neat design, built of Pelham granite and Longmeadow brownstone, graces the grounds.

Located in a most conspicuous spot, it seems to say that the study of Him who "ruleth all things well," should come first. The main auditorium will seat about five hundred. In the rear are the Christian Union rooms, which, by throwing open folding doors, will increase the size to a considerable extent. The new dormitory and agricultural hall, beside providing ample accommodations for thirty-six students, (without the tower.) secures a long-needed home for the agricultural department. The student rooms, all facing to the south, are cheerful and commodious, each study being provided with an open fireplace. The student now finds accommodation here varying from a moderate price to those equal to any found in the best college of the country.

The Experiment Station, although an institution entirely separate from the college, is well deserving of a share of our attention. Its reports are worthy of the closest scrutiny, and should receive the careful attention of every student. As with most like reports its publications are soon laid away on the high and dry shelves of our bookcases, to become covered with the dust of time.

Owing to a lack of funds the most rigid economy has been necessary from the first. Much that might otherwise have received attention in the field, barn, and laboratory, has consequently been left undone.

Probably the most valuable work of investigation has been the trial of different species of leguminous plants to determine their value for fodder and green manuring. It is poor economy for the farmer to confine his attention to the growth of corn alone for green feed or for ensilage. It is too exhaustive, and

a rotation should be practiced. Many of the leguminous plants, as vetch, lupine, and horse bean are found to be far more nutritious than corn. They can be grown in a comparatively short period of time, and brought into use in consecutive periods throughout the summer months. The practice of growing such crops as vetch and lupine in connection with oats or barley is recommended in the Station reports. The mixture is more nutritious, while the yield is no doubt greater.

The species of the order Leguminosæ are well known for their value in green manuring. If by their use the vast tracts of nearly barren lands throughout the State can be made productive, great good will be accomplished for the farming community. Leguminous plants seem to have the peculiar faculty of obtaining their nitrogen where other plants cannot. When plowed under they leave, in a readily available condition, a large amount of plant food which would otherwise be inaccessible. At the same time you incorporate into the soil a large mass of carbonaceous matter, making the soil more retentive of moisture and heat. Seed has been sent out to responsible parties in different parts of the State, and the value of such crops will be further tested, on a larger variety of soils than the Station affords.

The new laboratory will soon be completed and equipped, and will provide adequate facilities for all the work that can readily be expected in the chemical line, for quite a series of years. New apparatus has been ordered from New York and Germany and will be on hand as soon as the building is ready. The offices in the main building are for literary and clerical work, and will be neatly furnished, while the upper story will provide apartments for assistants. A library will at once be started, and collections of value will be made and kept for reference.

The Station during the past year has been put on a firm basis, and with an annual appropriation of ten thousand dollars at its command, solid work can be expected. Dr. Goessmann is a most careful investigator. Slow and conservative, yet sure of some accomplishment in the end. None of your "hurry up boys" style of work will be allowed here. The cry for "something to publish," something to make a stir in the newspapers, will be left for the attention of others.

THE POWER OF THE PRESS.

A few years ago thinking men were agreed in grouping the dominant forces of our civilization into three great classes,—the Family, the Church, and the State. These were preëminent; all minor forces being included in this generalization.

To-day another force plants itself beside, yea, perhaps far above the ancient three—Journalism. Its power is felt in every civilized land. Its voice is heard in every religious, social, and political question of to-day. It stimulates and energizes the world to high and noble action, or else it degrades the human mind by a sting whose poison penetrates the whole being.

As soon as the shackles that so recently bound the art of printing in its early existence were loosed, the growth of this now irresistible power began, slow, yet steady and progressive. It rose gradually into a field of usefulness, that soon placed it in the foreground of the dominant elements of our civilization. Few of the leading journals of to-day are not "ruled and run" by wealthy monopolists or party rings, thus intruding upon private rights and threatening public well-being.

No aspirant for political or party gain will now learn his lessons in politics from men and principles; but will seek the patronage of some leading journal, and there secure the means for carrying out his own selfish ends.

As a conservator of literature and language, journalism is surely at fault, often running into coarseness and slang.

No scholar can question the propriety of using strong words and popular phrases, but a certain degree of discrimination must be exercised. No journal in the hands of educated men need be tainted by the use of slovenly words or unwholesome and repulsive sentences.

The speeches and writing of Burke, Chatham, Webster, and Sumner need no reinforcements. Every word has a place, and every sentence a thought that is stirring and impressive. Still graver is the attitude of the press toward public morality. More time and space are often given to the recording of filthy and scandalous trials, youthful elopements, and petty family quarrels than is devoted to intellectual and wholesome reading. The frivolous and often sickening manner in which the heartless

deeds of the murderer or "professional" thief are treated, and the sarcasm and ridicule that is often cast upon the preacher, cannot have other than a degrading influence upon mankind.

The press to-day, above all things, needs reform. It cannot rise above the fountain heads whence it flows; yet by filtering out the poisonous influences of ringleaders, monopolists, and selfish aspirants, and placing its control in the hands of educated men, we may secure for it purity of thought and action that will place it above reproach.

We all look forward with earnest expectation to the day when the press shall be free from political bondage, when its light shall lure men to loftier fields of action, and when this now powerful evil shall become a complete blessing in the hands of a civilized people.

Some years ago there lived in one of the eastern counties a man who was very fond of a cat. It became quarrelsome, and its life was finally terminated by some of the neighboring felines. After this, he kept several; but all were killed in the same way. He was very sorry over his loss, but, nevertheless, he could not give up the idea of keeping a cat. After earnest research he secured one which seemed a powerful representative of its family. He did not like the idea of calling it "Cat" because of the sad end his former pets had all met. The name "Dog" was finally given it. One day a dog in the town was seized by an eagle and carried away. Kitty now received the name "Eagle." A few days later an eagle came and perched upon the branches of a tree that inclined against a wall of the house. This individual naturally concluded that the tree must be stronger than the eagle in order that such a bird might perch in its branches, and so named his animal "Tree." However, the winds came and beat upon that tree and it fell, so Kitty was dubbed "Wind." Later, by a series of metaphysical reasoning, he concluded that because the wall withstood the force of the wind it must be stronger than the wind, so the cat received the name "Wall." His mind was now at rest. Peace smiled on his hitherto restless countenance. He believed that he had surely found the right name at last. In the still hours of the night, however, Mr. Rat began his accustomed gnawing, and a hole was later discovered in the wall. Rat must be the right name, he thought, and this the cat received. In accordance with its feline proclivities kitty, a few days later, had the extreme pleasure of securing Mr. Rat for his evening repast. What was the poor man's dismay at this discovery! There was nothing to do but return to the original. After sore experience he decided that cat must be "Cat" wherever cat lived.

PHOSPHATE MINING IN THE SOUTH CAROLINA DEPOSITS.

The "low country" of South Carolina, from a point a few miles north of Charleston nearly to the Georgia line and extending several miles inland, is underlaid with a nodular deposit of phosphate rock. The stratum varies from two to twenty inches in thickness, and dips and bends, appearing here and there, now on the surface, now near it, now deep buried in the earth. This rock is largely used in the manufacture of commercial fertilizers, being readily cut by acid, and furnishing an acid phosphate analyzing from twelve to fourteen per cent. of available phosphoric acid.

This deposit is composed of "land rock," "marsh rock," and "river rock," the first two being obtained by the removal of the overlying earth, by hand machinery, the latter by dredging or hand picking. Land rock has a light reddish color, river rock a dull grey to black, while marsh rock partakes of the characteristics of both. The nodules are of all sizes, from the ton weight to a pebble, and are of varying appearance. Thus, Beaufort River rock is a dark grey, dull-looking rock, much like an ordinary stone. Morgan River rock, on the contrary, would attract attention anywhere, being either very black, shiny, and fine textured, or dull brown, full of fossiliferous shells and infusoria, converted by some mysterious reaction in Nature's great laboratory into phosphate. Myriads of petrified teeth, tusks, bones, etc., are found in the deposits, and occasionally a torpedo or a shell is raised from the waters, mute testimony of a quarter of a century ago.

The working of these deposits is termed "mining." Immediately there springs up before the eye visions of shafts, tunnels, drifts, and the various appurtenances usually associated with conventional ore or

coal mining. Never, however, was term more inappropriate, for phosphate mining is hardly more than ordinary ditch-digging and mud-dredging on a large scale. Notwithstanding this, however, some of the methods of procedure are interesting, and it may not be without profit if we spend a few moments in reviewing this peculiar class of mining.

Land and marsh rock are mined by the removal of the superincumbent earth and the loosening and raising of the rock, a series of trenches being made, the soil from one trench filling that just excavated.

The rock thus obtained is full of marl, dirt, shells, sandstone, etc., and being conveyed to the "mines" (which is generally the place where the rock is *not* mined, but which is the universal term for the works), is washed in huge revolving washers, which mechanically separate the mud and marl, is carefully culled over, and all sandstone and shell picked out, and dried by hot air blasts. In this crude condition, uncrushed, big nodules and small, it is ready for shipment as "Crude Hot Air-Dried Phosphate Rock," being sold usually on a guarantee of fifty-five per cent of Bone Phosphate of Lime.

Manufacturers in this country usually prefer land rock to river rock of a similar grade, for being much softer it causes less wear and tear on the mills. It has the disadvantage of containing larger quantities of carbonate of lime than does river rock, which necessitates the use of more acid to produce the same results as in a less highly carbonated rock.

River rock is much harder and more compact in texture, and ranges rather higher in percentage of phosphoric acid than does land rock. It is dredged or "hand picked" with huge, long-handled tongs from the river bottoms, namely, in the Wando, Stono, Edisto, Coosaw, Bull, Morgan, Beaufort, and Broad rivers. On all rock mined on navigable streams the State imposes a royalty of one dollar a ton of crude undried rock. This affords no small revenue to the State treasury, and places the river rock miner more on a par with the land rock miner, who is compelled to own or lease his land, to fell trees, etc.

Hand picking is done entirely by negroes, and in the months of June, July, and August. The rock is sold to the large mining companies. The dredges are of two distinct classes,—the single-bucket dredge and the chain-of-buckets dredge. The former class comprises several models more or less radically different in structure, including the Osgood, the scoop, and the grapple. The Osgood and scoop consist of a single scoop shaped bucket, worked between a huge pair of shears which, being lowered with a forward and upward sweep, gathers the rock from the river bottom below the mud, raises and dumps it on the lighter alongside. The "grapple" dredge also has a single bucket which, opening and shutting like an immense, wide pair of tongs, grabs and pulls the disjointed nodules from their bed. These dredges do very good work in most of the beds, but in the thicker and more compact strata their work is superficial. The rock thus dredged is full of mud, marl, sandstone, shells, and other rock, all of which has to be lightered to the shore works and there washed.

These machines resemble in size and general appearance the ordinary mud dredges of the Northern harbors, though much stronger built to withstand the heavy strain.

The bucket-chain dredge is a much larger and more powerful machine than these just described, its main feature being a chain or ladder of thirty-two buckets with immense cast steel teeth, each bucket weighing between two and three tons,—the whole system, including links and tumblers weighing considerably over a hundred tons. The system forms an endless chain which is so controlled by steam winches that it dredges at any desired depth. The rock is washed by ingenious rotary washers before leaving the dredger, and drops on the lighters clean and washed, ready for the drying sheds, thus saving the expense of towage of useless material and the erection of expensive shore washers. There is but one of these powerful dredges in these waters, owned by the Phosphate Mining Co., Limited, the essential features of which are protected by patents. The powerful engines and, in particular, the peculiar construction of the buckets, enables her to dredge the hardest and most compact strata where no other dredge can work, and to raise several hundred tons of rock daily.

The shore works of river rock mining companies consist of huge drying sheds, shore washers, elevators, cranes, trestles, engines and boilers for steam power, storehouses, offices, etc. River rock is dried in a similar manner to land rock, and is mainly sold in Europe. Usually "ocean tramp"

steamships, carrying from 2,000–2,700 tons, are chartered and loaded. As I am writing, the steamship "Horton," of London, carrying 2,150 tons of rock, is being loaded within a few hundred feet. The rock is wheeled by barrow from the drying bins, dumped into cars, which are pushed on to scales, and the elevator, by hand power raised, tipped, and the contents shot into the steamship's hold. On being emptied the car runs back by gravity to be again filled. With the introduction of the Stortevant and the Leucoup mills in the factories of this country, which by ingenious mechanism makes the rock grind itself by the attrition of the nodules against each other, the consumption of river rock on this side of the water will rapidly increase.

From June 1, 1882, to May 31, 1883, the output of the phosphate mines was 355,333 tons crude rock, which was nearly equaled in the eight months succeeding to Jan. 31, 1884. The indications are that the output of the current year will reach fully 500,000 tons.

This immense industry has been largely developed by English capital, to some extent by Northern, and but little by Southern capital. The deposits seem inexhaustible, and bid fair to remain for years to come the principal source of phosphatic rock in the world. H.

Beaufort, South Carolina.

AINOS.

The Ainos are the inhabitants of a large northern island of Japan, called Yezo. This island lies mostly between the 42d and 45th parallels and is more than 30,000 sq. miles in area. Sapporo, one of the towns in the island, is the seat of the Imperial Agricultural College founded by Ex-President Clark.

The Japanese call the natives Yezo-zin, which means "barbarians." They have been described as having straight eyes, square shoulders, full chests, and bushy beards; features which led some to believe that they belonged to the Caucasian race. This is not true, for their slit-shaped eyes, broad base of the nose, projecting cheek-bones, and coarse, stiff hair, with a tendency to stand straight out from the head, show that they are probably Mongolians. Their habits vary in different parts of the island. Most of them are timid, submissive, and good-natured, and are easily subdued by the Japanese. They live upon the products of the chase and fishing, and are accustomed to endure much hardship.

I will here quote a few words from the description of Prof. D. P. Penhallow who has observed these people for over four years: "During the whole of our tramp of eighteen miles, the three men carried loads on their backs weighing from fifty to one hundred and twenty pounds, and that too through places where it was enough for me to carry myself and gun; yet they never seemed exhausted, but walked with a firm, strong step to the last." They are clever in engraving. They cannot make knives themselves; but they are very expert in sharpening them. The boats are made in a very simple way. They are either canoes made by hollowing large trunks of trees, or small boats built of boards tied together with ropes made from the skin of a fish named Todo. We might suppose that they could not do anything with such frail boats; but the natives use them on the rolling waves of the ocean without much trouble. They are very superstitious, and when they want to sail they do not carry any supplemental oar.

The Ainos value old things, and also brilliant objects. Most of them gladly show their valuable articles when a Japanese asks to see them. They have no temple. Most of them burn fires out of doors and pray. Some worship the sun, moon, stars, etc. When relatives, who have been separated for some time meet, they put their foreheads together, and, pulling each other's ears, cry bitterly. They respect their elders, and when they meet them on the way, always give them the best part of the road.

They have no letters, and consequently we cannot obtain the history of the people. Dates are unknown among them because they have no almanacs, and their ages can be found out approximately, only by guessing. Musical instruments are few. One of them is something like a banjo; but its head is elliptical and has three strings. The ceremonies of marriage, burial, etc., differ very much in various places, and cannot be here described.

The Ainos who live near the shores are more or less civilized by the Japanese settlers. Some live in nice houses, comb their hair, shave their beards, take baths, use umbrellas, and some of the girls are

taught to dance. A few blacksmiths, carpenters, and business men are found among them.

The native population is decreasing every year. Fifteen years ago, it was about 16,000. The census taken eight years ago shows that it is only 13,000. There are several explanations of this. The most probable one is that formerly they were the only people in the island, and could obtain provisions with their clumsy instruments without any trouble. Since the Japanese began to settle, and catch fish and game with better instruments and in more expert ways, the natives cannot obtain their food so abundantly, hence their numbers lessen.

SOCIALISM.

Oration delivered at Boston University June 2, by G. S. Stone.

The question of the true province of civil government has occupied the minds of men from the earliest times. For many years Europe has been agitated to its center by a class of men known as Socialists. These socialists are usually revolutionists of a more or less sanguinary type, and as such their influence has been felt in nearly every country of the old world. Germany has felt it and nothing less than the strong hand of Bismarck could have availed to hold it in subordination. France has felt it; she recognizes and fears its presence to-day. The vast monarchy of Russia has felt it; the bomb of the socialist has shaken the very foundations of the throne.

Our own country has offered a hand of welcome to the poor and oppressed of every clime and has allowed to all such liberty of thought, speech and action as to leave no room for any wide spread dissatisfaction. But, nevertheless, socialism has come among us and begun its work of riot and bloodshed.

The alleged cause of the growth and development of socialism here is the apparent injustice and cruelty practiced by the rich capitalist upon the poor laborers. The toiling workman, it is said, has been crushed beneath the merciless heel of the employer and the socialist claims that no constitution or laws should prevent the laborers from dictating the terms of employment and the distribution of wealth. They point to such illustrations of the unequal distribution of wealth as this: There is a single man in New York whose income would suffice to feed and clothe fifty thousand families. In the same city there are more than that number of families working to their utmost to make ends meet, and a large number living in squalor and misery. Is there, they ask, any apparent difference between the constitution of the rich man and that of his poorer neighbor which can justify such inequality in the wealth they possess? It is evident, they say, that any system which would distribute his surplus wealth among the poor and unfortunate would tend to the public good. Such ideas have become firmly rooted in the minds of a part of our population and every inflowing wave of immigration broadens and strengthens the class that upholds them.

Socialists are composed of two classes. First, the malcontents of every clime, of revolutionists, anarchists, haters of law. This class forms and leads the mob in our large cities. They have nothing to lose, as they possess no real property or permanent wealth. They have no interest in promoting the public good. Their only motive is the desire for their own immediate gratification, joined with a jealous hate of all who possess wealth The second class is composed of ignorant workmen who, led on by others and inflamed by the harangue of demagogues, come to believe that they are ill-treated and abused by their employers. They are induced to join in strikes, become idle, discontented and vicious and are ready on any pretext to array themselves against those whom they are led to regard as their natural enemies. In this class I would also put those would-be-philanthropists, men of large impulse but little reason, who deeply impressed by the sufferings and wretchedness of the poor, would overturn the present social system, arising from the nature and relations of men, and put in its place a new and better one by means of which they expect to do away at one sweep with all poverty and its accompanying evils. These sentimentalists would have labor reckoned in hours the measure of wages, so that the general and the groom that brushes his horse, if working equal number of hours, should receive the same pay.

Many wide-spread, popular errors aid socialism. One of these is the belief that the enjoyment of wealth is in proportion to its amount. But the wealthy can use but little more for personal gratifi-

cation than the poor while they often subject themselves to crushing anxieties. The greater part of accumulated wealth is used, directly or indirectly in furnishing employment for workmen, manufacturing clothing, building homes and in providing, through the ordinary channels of business, the necessaries and comforts of life for the people. Another error lies in regarding labor as the only element of production. In leaving out of account the essential elements of production furnished by capital they ignore that without which labor would meet with little reward and individual comfort and national prosperity would be impossible. Capital raises a nation to the highest rank in material prosperity; the want of it sinks a people to the level of savages.

Socialism disregards the plainest facts of human nature. Men do not, as a rule, enjoy labor for its own sake. Socialism would assure to all enough to support themselves and their families. This done, the inducement to shirk and do as little as their civil regulations allow, would paralyze the productive energy of the nation. This security of support would also promote the increase of the ignorant, improvident and vicious classes. A large increase of the lower classes could not but lower the plane of efficiency in the whole population.

But even could it be shown that these practical difficulties could, in time, be overcome there yet remains the one great and overpowering reason against a system of this kind. It removes all spirit of self reliance and takes away all permanent inducement to labor.

Spirit of the Pilgrim Fathers! Remove the spirit of individual self-reliance and what are we? Parts of a machine; bodies without souls; men without enterprise, without intelligence, without the nobility of a Godlike purpose.

M. A. C. LECTURE COURSE,

DURING THE WINTER OF 1885–86.

Few things add more to the winter term of a college than a good lecture course. Acting on this principle, the Senior class appointed their lecture committee early in the year, at the same time voting that Prof. Goodell should be considered a member of the committee, and it is very largely due to his efforts that the course was so successful. The students generally bore the expense well, and their attendance and attention were excellent. The first lecture was given Dec. 12, 1885, by Rev. Mr. Crawford, who was secured by Pres. Greenough. His lecture was concerning his missionary work in Turkey; it was very interesting and was thoroughly enjoyed. The greatest point it made was that the Mohammedan religion, though carried farther into the everyday life of the people, was merely an empty shell, with little meaning to the masses beyond its forms, and that the missionary force was far too small to produce much apparent effect on the people. Jan. 13, 1886, J. E. Gardner, D.V.S., now of Hartford, Ct., lectured before the students on Veterinary Science, giving its history and its relation to the public. The science is young, and its growth in this country has been very recent. With something like $2,000,000,000 worth of animals in this country, we have only about 500 veterinary surgeons to look after their welfare; being, in this matter, far behind the civilized European nations. The science has been looked down upon by many, especially by physicians, so that some veterinary surgeons have taken the degree of M.D. in order to be on an equal footing with other doctors. The latter part of the lecture was a scientific and well-expressed definition of disease, with some discussion of its cause and prevention. The lecturer treated successfully a subject which is hard to deal with in a popular lecture, and the students appreciated it. Jan. 21, Hon. Levi Stockbridge gave a discourse on the Yellowstone National Park, which he called "A Ride through Wonderland," and which certainly merited the name. To tell its success we only need to say that the lecturer kept an audience of students quiet for two hours, and when the lecture was ended, every one felt as if he would like to hear more. The Park is a rocky, mountainous desert, and no place for the kid-gloved tourist. About the first thing the lecturer saw in Wonderland was a gigantic mountain lion in the hall of the Mammoth Springs Hotel, bearing the placard, "Meet me by Moonlight Alone." He did not say whether it was alive or stuffed. On account of the lack of rainfall, the days and nights show a great variation in temperature. In the Park are found sandstone, limestone, igneous and conglomerate rocks, but the lecturer failed to see any

evidence of volcanic action. The "mud basins" are usually about 100 feet in diameter, with a rim about six feet high, filled with a boiling hasty-pudding-like mass. The "paint pots" are similar, from 1 to 50 feet in diameter, while the boiling substance is colored; it makes good paint, and will last four or five years. "Hell's Half Acre" is about ten acres in extent, filled with sulphur deposits and boiling sulphur springs. Prism Lake is a basin of about 100 acres filled with a spongy mass, from the upper side of which flow small streams which give every color of the rainbow. The hot springs of the Park are larger and more in number than in any other place in the world. There are about 2,200 in the Park. Those at the mouth of the Gardner river extend $1\frac{3}{4}$ miles up and three miles along the mountain side. The Geysers are 70 or 80 in number and spout at intervals of from once a minute to four years, some of them throwing water 200 feet high. The canon of the Yellowstone is twenty miles long and 1,300 feet deep, with strata of colored earth up and down its sides.

P. M. Harwood, of Barre, lecturer of the State Grange, gave a very interesting lecture about the Patrons of Husbandry, Feb. 4. He showed plainly and conclusively that the Grange had done and was doing a great deal of good for the farmers. The order was founded at Washington, D. C., in 1867, by O. H. Kelly, a clerk in the Bureau of Agriculture. Its rapid growth and great success have shown its usefulness.

Feb. 10, Prof. B. F. Koons, of Mansfield, Conn., gave a very entertaining lecture on "Deep Sea Dredging." Prof. Koons brought with him a great number of specimens of deep-sea life, models of dredges, tables of temperature, etc., so that the most scientific and technical parts of the lecture were very easily understood.

By far the liveliest and most popular lecture of the course was given Feb. 17, by Rev. Dr. Angier, of Turners Falls. Subject: "Enthusiasm." The lecturer had so much of his subject in him that the lecture could not fail of being successful, and his fund of jokes and anecdotes was a powerful factor. There are thousands of talented young men who die without making use of their advantages to one poor lad who with a heap of enthusiasm makes himself prominent in some line. A young man with a pound of energy and an ounce of talent does more, as a general thing, than one with an ounce of energy and a pound of talent. Enthusiasm has made poets, invented the sewing machine, laid the Atlantic cable and, in fact, done about everything which has been of any good to the world. "Young gentlemen, if anything turns up for you, you have got to turn it up." Clay, Webster, and Choate are glorious examples of the enthusiasm of eloquence. The enthusiasm of impulse is what we need in our everyday dealings with men. A person with plenty of it is always a better companion and neighbor than one who can't laugh.

A very entertaining and instructive lecture was given Feb. 24, by Dr. Hamlin, on the "Eastern Question." The question is simply one of the balance of power in Europe. All Europe has opposed every attempt by Russia to gain more territory and power. England has always headed the opposition, but Gladstone's foreign policy has been so faulty that England has lost ground and now Germany is Russia's greatest opponent. Constantinople is what the trouble is all about. So long as Turkey has her, the balance of power is not disturbed. That city controls the Mediterranean, and any movement which tends to throw her into the hands of any other nation is watched with jealousy by all Europe. Servia wanted to get Bulgaria and have a port on the Mediterranean. Bulgaria objected successfully. Russia wants to get Bulgaria and then Constantinople. Germany and England and the rest of Europe are objecting, whether successfully or not the future must tell.

Mar. 10, Rev. Mr. Dickerman, of the First Church of Amherst, gave a very interesting discourse on "Practical Education." He believed that the ability to succeed depended on the power of perception and the power of action, and that the test of education is efficiency. The essential part of education lies outside of our schools and colleges. A high ideal is useless without high endeavor. Wise, loyal, faithful leaders of men are needed everywhere. Place the goal high, and be not all eyes but all action.

Dr. Gardner lectured here again Mar. 24, his subject being a continuation of his previous one. He described the prevention and cure of diseases of animals more fully.

The lecture course of the past winter has thus consisted of eight lectures, all of which were closely listened to and well received. We hope there will be better courses in future years, for as a means of furnishing instruction and pleasure, the lecture course cannot be over-estimated.

THE MIRROR.

I.

In my room, upon the mantel, rests a mirror in its frame;
And some gorgeous tiger lilies, dashed with black and fringed with flame;
Mottled brown, and gold surround it in their beauteous tints aflame.

II.

Many quaint and curious objects are reflected in the glass;
Many faces peer into it, many sunbeams, and alas!
Many shadows there are mirrored as the hours in silence pass.

III.

But the shadows and the sunbeams on its polished surface cast,
And the faces and the figures one by one go flitting past,
Till the silence and the darkness find it all unstained at last.

JILTED.

To my youthful imagination, Lura appeared as the type of feminine grace and beauty. From her eyes beamed that exquisite sentiment of love. Enamored of her divine charms, I as the little blonde Cupid, paid her homage. I saw, intuitively, that there existed a congenial sympathy and our amorous feelings soon became mutual.

I must confess that at times the vague impression admonished me, that my hope was an illusion, and that I was to be capriciously dealt with.

"Harry," she often said, "how delightful it would be if we could live in some lovely forest glade apart from the city's din, where the dear little birds would keep us company."

In answer I built for her a beautiful, shady castle on the gentle slope of Mt. Felicity. It was fabricated of twigs, entwined together from the branches of the tree of affection, and the whole structure rested on beams of sunshine. The future bright, cheerful, prosperous, could be seen through its windows of hope.

Close by I constructed her rustic bower. Here, near to nature's heart, she could watch the buds of promise come forth and unfold their treasures. The wild rose, with its bursting fragrance of happiness, would add its charms for her enjoyment.

The journey thither I told her was the journey of life—it would last forever. Her darting eyes flashed with an unspeakable expression. Bending over her I asked her to accompany me, again reminding her that it would be for life. "Will it?" she asked. "Then I shall go on that journey that will last forever."

I involuntarily restrained my feeling of joy, for her words contained some mysterious meaning that foreboded ill.

I had noticed for some time previous that her bright gay nature was altered and her eyes had grown more languid.

How well, now, I understood the meaning of those words!

The storm-clouds gathered on every side. My visionary mountain was concealed. The heavy raindrops pattered against the windows of the desolate castle. The winds howled around it, and at last the "smoking thunderbolt" dashed it to atoms.

Was I deceived! Was I to be jilted thus? Yes, she fled with another stronger than I. The angel of death silently came and with him she went on that long journey that will last forever!

COLLEGE ATHLETICS.

It is true that the military exercises supply in a measure the needful training for bodily development. There is however a strong feeling prevalent among the students that a gymnasium is needed. If one was to be had and proper instruction given, the support would be forthcoming. The drill hall with the contemplated improvements would make an admirable gymnasium and as there is always one upon the faculty who understands the movements best calculated to promote general physical development, it seems as though a well regulated gymnasium could easily be maintained. The importance of this is too well known for a longer dwelling upon

it here. Let each and all, students, professors and alumni, put in an encouraging word.

The sports of this year have been limited in some lines. Last fall the foot ball team did very creditable work. Over sixty per cent. of the games played were won. Though prevented by the meanness of their "Intellectual" friends from entering the "pony league," they kept up their courage and were more jubilant over their season's work than the friends (?) who were forced to their accustomed place upon the back seat of the "pony phaeton." The games played were :—

Aggie	4	Amherst	0
"	0	"	0
"	14	"	0
"	42	Williston	12
Wesleyan Univ.	80	Aggie	0
Amherst	8	"	0

Very little, save the customary class games, has been done at base ball this season. A tennis association has been formed that bids fair for a brilliant career.

OUR FORESTS.

The question of the destruction of our forests and how to prevent it, is one of first importance to the American people, both from a financial and economic point of view. It takes but a day for the woodman's axe, a spark from the locomotive, or a match thrown by the wayside by the careless passer-by to practically destroy what requires a century for its replacement.

The vast extent of territory in northern New England which fifteen years ago was densely covered with evergreens has been gradually lessening, until nearly all the forests in proximity to good water communications have been cleared. At the present rate of destruction, it can be but a few years before New England will be devoid of spruce lumber altogether,—a loss she cannot well sustain.

Michigan, Wisconsin, and Minnesota are the great lumber States of to-day. The rapidity with which the forests of these States have been swept away in the past ten years is alarming. In Michigan alone, of the estimated 650 billion feet of salable lumber 850 million feet were cut in the year 1880. Since then the rate of destruction has increased. Fifty years hence—were no means adopted for its restoration—scarcely a vestige of forest growth would remain within the borders of the State.

Wasteful as is the process of converting the rough log into marketable lumber, more forests are destroyed every year by fire than by the axe. In Massachusetts alone 14,000 acres, valued at $100,000, were recently consumed in a single year. As popular as hard-wood finish has become for the interior of buildings in the past few years, yet notwithstanding, acres of the best hard wood of Central Michigan are converted into charcoal to be used in smelting the iron ore of the region. National revolutions may come and go, and generations will pass away ere these sturdy monarchs of the forest can be replaced.

Better means for the preservation of our forests should be adopted. Much can be done by calling attention through the census reports. This however, is not enough. More stringent laws against their destruction by fire and by the axe should be enacted.

Indirectly, the constant cutting off of the wooded districts has been as great a loss as directly. While the destruction of forest growth may not increase or diminish the rainfall, yet it does very materially diminish the amount of moisture in the soil and atmosphere throughout the year, as well as the amount of flowage in all of our streams. Mountain streams that years ago flowed copiously throughout the twelve months, at the present time are as dry as the desert of Sahara, for from two to three months of the year. The loss of forest growth gives free opportunity for water to flow off on the surface instead of being absorbed by the soil. In case of heavy rains tremendous erosions and floods are often the result. The rapid evaporation which the absence of tree growth permits dries up the fountain heads of our streams, cutting off the sources of water supply, and manufacturers and farmers suffer alike.

There is little doubt but what the sudden changes in our climate are in a degree due to this same forest destruction. It is held by some that the presence of large areas of woodland would tend to mitigate the severity of drouths, by keeping the amount of moisture in the atmosphere more constant. The sudden changes in the temperature of our tender farm crops, owing to the radiation of heat, is perhaps as

injurious to the vital activity of the plant as the actual absence of sufficient moisture in the soil. Lowering the temperature of many plants below 60° F. checks the vital activity, and fungus growth is often the result. In case of frost the injury does not result from its formation, but from the sudden changes of the temperature of the plant in its vaporization. Forest trees are hardy plants. If from the evaporation from their leaf surface and from the damp soil beneath and around the moisture in the atmosphere is kept more constant, the evaporation and consequent radiation from farm crops would be less.

European governments have long ago recognized the importance of this subject. They own and control the forests, placing them under the management of a forestry bureau. The forest regions of Germany are divided into districts over each of which a forester is appointed. Forestry is taught in all the leading universities, and no one can receive a government appointment without a university education. Under the forester's supervision comes the entire care of the wooded regions. Their protection, the thinning out, the resetting after clearing, the protection and care of the game and the fish, and the system of culture to be practiced. Rotation in culture was long ago introduced; trees of needle-shaped foliage generally following the broad-leaved varieties. Forestry in Germany comes under the industrial department of the government and proves a valuable source of revenue.

The remaining forest regions of the western part of our own country might well be controlled by the government. A system of forest culture should be introduced, and the remaining forest conserved, rather than allow the wasteful process of destruction now in vogue to continue. Much might be done by education. The people do not fully comprehend the immensity of the question, nor realize the influence it bears on the future of the country. The American people live too much for to-day, with little thought of the morrow. Let the people fully realize its importance in every feature, and all will sing with the poet:—

"Woodman, spare that tree,
Touch not a single bough;
In youth it sheltered me,
And I'll protect it now."

A VISION.

Released from toil, I sought repose
In sweet, refreshing sleep;
But in my slumbers deep
Vague pictures of "lang syne" arose.

Behold in yon and verdant field
Each dear familiar trace,
Each unforgotten face,
In panorama, dreams revealed.

And there the toilers work with pride,
As garner they the grain.
The manhood they maintain
Exalts the home where they reside.

The public scorns their zeal and zest,
Stand they disconsolate,
Abiding wicked fate
When they're for noble things in quest?

O, no! the picture they reverse,
Their noble efforts thrive;
Rich treasures they derive
From Mother Earth's productive purse.

An angel softly glideth there
And whispering mystic words,
Sweet songs of unseen birds
Arose and music filled the air.

Dear college sleep revealed your growth,
Your hopes, your poverty;
But now prosperity
Triumphant over taunts, comes forth.

Since you I viewed a decade's o'er
I'll write to "Bill and Joe,"
And we'll together go
To visit scenes we loved of yore.

How changed the place, how altered all!
There looms the new kirk's dome
Above the pond'rous tome
And sentinel stands to the new hall.

Old South—what memories arise!
There pretty maids we kissed,
Or played at games of whist,
Wines drank, and sang to midnight skies!

Here nature dons her gorgeous dress
Her flowers in gayest hue,
And leaves of deepest blue,
Cool lawns now beautify and bless.

CHANSON DE ROLAND.

The Song of Roncesvalles stands preëminent among the old chansons de geste. It is the story of the Christian hero standing out in his own individuality against the dreaded Mohammedan power. Single handed he strikes to the ground scores upon scores of the despised heathen. He combats for a noble cause. The purpose gives him strength. For his country, his faith and for his god-like master Charlemagne he fights and for these he sacrifices life.

Nowhere could the beauty, simplicity and nobility of the poem be realized better than in the mediaeval castle, where the Trouvére sang the tale to enraptured ears. Never was valor raised to a higher pitch than William manifested on the Plains of Senlac, when Roland's deeds were chanted in his ear.

No heroic character of the epic, ancient or modern, surpasses Roland in his valor, fearlessness and even daring. He stands forth as the "Christian Achilles," but presumptuousness mars his character. To this Ganelon's treason can be directly traced, for his pride was wounded by his step-son's indifference and scorn. For Roland's destruction he plotted and bargained with the Saracen king. He debases himself and forever typifies sordidness. He sells his country, and causes the fearful disaster of Roncesvalles, where the mighty peers of Karl fall to a man before desperate odds.

Legendary tales may be recited but none can attain to the dramatic picturesqueness of the scenes depicted in the vale of Roncesvalles. Here Roland was stationed, with the rear guard—a mere remnant of the valiant host. Countless numbers of the Saracens, in serried ranks, advance to meet their Christian foes. Oliver, Roland's friend and peer thrice prays:

> "Roland, Roland yet wind one blast,
> Karl will hear e'er the gorge be passed."

But, blinded by his pride, he replies:

> "I will not sound on my ivory horn
> It shall never be spoken of me in scorn,
> That for heathen felons one blast I blew."

Archbishop Turpin shrives the lancers and enjoins on them the penance to strike down the pagan. Now arises on every side the wild "Montjoie!" Aroused by the battle-cry, the Franks turn their impetuous steeds toward the swarming foe. Each of the peers performs prodigies of valor. They fight man to man. Roland hearing the scoffs of the leading Saracen, he

> "Drove at the heathen with might and main,
> Shattered his shield and his hauberk broke,
> Right to the breast-bone went the stroke;
> Pierced him, spine and marrow through,
> And the felon's soul from his body flew."

The Archbishop likewise, wields his weapons with wonderful dexterity, and performs marvelous deeds of daring. With superhuman strokes he sends his sword through horse and rider at a single blow.

> "Right thro' the hauberk and thro' the skin
> He drove the lance to the flesh within;
> Prone and sudden the heathen fell
> And Satan carried his soul to Hell."

Thousands upon thousands of the enemy fall before the hands of the Christians, whose number is fast diminishing. Roland in desperation sounds his horn with such force that it bursts in twain. Its note reached Karl thirty leagues away. The Franks retrace their steps to reinforce the rear guard.

In the mean time the battle rages. The twelve peers are reduced to three, and Oliver is fatally wounded. Blinded by the blood coursing down his face he raises his sword and strikes Roland who was by his side. "My comrade thou dids't it not wittingly. I am thy Roland who loved thee so dearly." "I hear thee," replies Oliver, "but I see thee not. Have I then struck thee? Forgive it me." Nothing seems more sad or touching than the parting of these two champions of the Christian cause. In his grief over Turpin's death, he wanders off to a distance. Fearing that his sword, Durindana, may fall into the enemy's hands he smites it against the marble rock, which cleaves and crumbles beneath its power. It remains uninjured. He swoons away, but yet has life enough to conceal it beneath his body. With the Christian's prayer upon his lips, he turns his face to the foe and expires.

With unspeakable sorrow Charlemagne laments the loss of his noble peers and Franks. Vengeance will be his. The sun stands still in the heavens, and lights him in pursuit of his enemy. He slays the Saracenic army at wholesale or drives them into the river Ebro. He captures Saragossa, their chief seat, and forever destroys their sway in Spain.

On his return to Roncesvalles he finds Roland's corpse under the arching trees, where he fell. An affecting scene is presented to us here. Over his sacred dead the Emperor tearing his long heavy beard swoons away. He revives and calling him his "Roland beautiful and brave," he says:

"In evil hour thou soughtest Spain;
No day shall dawn but sees my pain,
And me of strength and pride bereft,
No champion of my honor left."

Within a year two of the former presidents of M. A. C. have been silenced in death.

Henry F. French was born in Chester, N. H., in 1813, fitted for Dartmouth but never entered, studied law with his father and began to practice in Rothingham County in 1835.

Judge French began his labors in the days when Jeremiah Mason and Daniel Webster were acquiring fame in New Hampshire and went through the same rough and incessant drill in the county courts. A little later he became interested in farming at Exeter, and wrote many articles for the New England Farmer, of which his brother in-law, Simon Brown of Concord, was editor.

His work on "Drainage," published in 1859, has been highly prized by agriculturists. He was first president of M. A. C., having been elected in 1864. His connection with the institution was short, and he resigned in 1866.

His interest in agriculture, however, never lessened, and in later years he did much to improve the condition of the farming community in the vicinity of his native town. The beauty of the streets of Exeter and Chester is largely due to his efforts; and Exeter public library was founded through his instrumentality. He was well versed in law and literature and proved a most valuable citizen wherever he resided.

The not unexpected death of Col. W. S. Clark last February could not help casting a gloom over the countenance of all who knew him but a few years before as the active, energizing, life giving president of M. A. C.

Wherever his station in life, whether in the battle-field, in the class-room or in the Legislature, the same spirit of enthusiasm filled his being. Brave and courageous, he knew not surrender. At Chantilly when with his handful of men he was surrounded by a rebel horde he fought his way out and escaped alone to tell the tale of hardship. Commanding and inspiring as a teacher he always held the respect and attention of his students. In skill and power as an educator he had few equals, and the ardor which burned in his own soul could not help kindling a spark in the minds of those who were fortunate enough to be his associates.

As a citizen and a public man he was always open-hearted and conscientious, contending nobly for justice, freedom, temperance and religion.

The missionary work he did while in Japan was a great solace to him in his last sickness. Many a touching letter has he received from young men whom he inspired to take up the cross in behalf of Christ. His interest in our college never lessened. Even to the last his advice, his frequent inquiries about his former students, and his sympathies, showed a lingering love for the institution where the pride of his manhood was spent.

O! THOU ART LIKE A FLOWER.

(FROM THE GERMAN OF HEINE.)

I.

O! thou art like a flower—
So sweet, and pure, and bright;
I look at thee and sadness
Is mixed with my delight.

II.

Methinks to lay my hand on
Thy head would be but meet,
And pray that God may keep thee
As bright and pure and sweet.

CYCLE SUPPLEMENT.

The CYCLE Supplement will be issued as usual at the close of graduation exercises Tuesday morning. It will contain a complete account of Commencement exercises, the list of prizes, and other interesting matter. Do not fail to purchase a copy. Price two cents.

OUR LITTLE WHEELS.

"Chills."

Over West.

"Ye gods of war."

"None of yer sky-larkin' here."

Lieut's. dog: don't like the smell of powder.

Chateau dû Hermitage—the place of Kneipers.

From whom? Apple blossoms and sweet peas.

W. E. Stone, '82, matriculates with '86 at Boston University.

How did we spare the Seniors so long? Three days and a half!

Only twelve M. A. C. graduates married in a little over a year.

A group picture of the three Captains is for sale at Lovell's. Price 25 cents.

The Lab. gas machine furnishes gas for the new chapel and portions of the new dormitory.

Some of our recent graduates would be pleased to know the definition of "chemical agent."

The doctor and Mrs. Miles gave their annual reception to the Seniors, Friday evening, May 11.

Who is the Junior that boasts of having convinced his chum that "cleanliness is next to godliness?"

Dr. M.: "What are the principal farm implements?" Mr. Ateshian: "Plows, harrows, and sewing-machines."

Dr. M.: "Mr. Chase, what would you do after you got to the end of these experiments?" Mr. Chase: "I'd be dead."

The last bull in Senior recitation. Dr. G.: "Where do we get dextrine, Mr. D——n?" Mr. D.: "From fish, I think."

Dr. Miles has entered upon his work as farm superintendent with great zeal. Give the doctor time and means and the farm will blossom like a rose.

The boarding house has become a favorite resort among the under-classmen. It is extremely *blissful* to spend *lengthy* evenings there or e'en at times to take a *nap*.

G. S. Stone represented the Senior class at Boston University, June 3. His subject was a live one, and his speaking was pronounced as being above the average.

Great credit is due Professor Maynard, for the fine appearance of the grounds. He has spent much time in their careful preparation and is to be congratulated.

One of the finest sermons that it has been the privilege of the students to hear, was delivered by President Greenough, in the old chapel, June 13. His theme was, "I will give you rest."

It is said that our National Congress has passed a resolve in favor of J. R. B., to the effect that fourteen copies of all books published by the government shall be sent to his address gratis.

It is with a feeling of sadness that we record that one professor in college cannot find time to have his pictures taken. The poor seniors consequently have to suffer. What would become of the $16-albums if all were as busy?

The name "Hash House" seems a thing of the past. It is now spoken of with all due respect, as "Our Boarding House." Certainly the proprietress deserves commendation for her successful management. We hope that better encouragement will be given her next year.

No military prizes were offered this year and hence no theses were written by the Seniors. It would seem that this custom should be kept up. Let the public know that the students are versed in matters pertaining to the welfare of the country at large, as well as in facts of history and science.

A change has been made in the method of examination for the Grinnell agricultural prizes. Instead of having the usual written and oral examinations, each Senior has been assigned a subject upon which he was expected to write an essay, the same to be read and discussed before the examining committee this afternoon.

The tennis tournament of the present term was entered into with much spirit, and the activity of its members promises well for the future of the association. It has been conclusively shown that while there is plenty of room for improvement,

there is no reason why we should not hold a high rank in tennis.

The Seniors, with their usual thoughtfulnes, have presented our old historic friend, "Uncle Jerry," with a splendid purse. A Commencement present is now in order. It would be a treat to some of the old alumni to hear him recite his stores of historical knowledge, and to see him in his quaint politeness "thank them kindly" for their gift.

Dr. Miles to the Junior class: "Where did I get these manurial values?" After various wild replies, each brilliant youth being floored, Mr. Worth'ng't'n is met with the blunt query, "Do you know?" "Sir John B. Lawes" is the short but earnest response. Dr. M.: "Class is dismissed!" The tumultuous uproar was too much for the doctor.

W. E. Stone sails for Germany with the select South Hadley "party," June 26, where he expects to study for about two years. His special line of work will be physiological botany. Mr. Stone has acquired a host of friends since his connection with the Experiment Station, who wish him the highest success in the continuation of his studies. Few members of '82 have made more progress than he since graduation. We hope to welcome him in the near future as Dr. Stone.

Through Prof. Goodell's untiring labor the college library has been greatly increased in efficiency. When nicely arranged in the new building with an excellent reading room adjoining it will prove of great value to the students. There are now 5000 volumes on its shelves, and of these over 1500 have been secured this year. Marshall P. Wilder, who has always given his earnest support to any measure that was for the furtherance of the interests of the college, has lately given 200 volumes.

The Farnsworth speaking and commencement exercises are both to occur in the new chapel. The building is a good one for such purposes, the speakers being easily heard in any part of the hall. The speakers of to-night are as follows: Sophomores—F. H. Foster, The Battle of Mission Ridge; A. I. Hayward, Battle of Marengo; R. B. Moore, The Union; B. L. Shimer, One Niche Higher; Freshmen—B. L. Hartwell, The March of Attila; W. A. Kellogg, The American Sailor; A. L. Miles, Washington; Y. Okami, War.

A new invoice of apparatus has just arrived for the mathematical department, and a long felt need has at last been supplied. Among the principal pieces is a fine spectroscope, and various models of pumps, a full set of mechanical apparatus, instruments for demonstrating the laws of heat and light, Koenig's manometer, bellows, prisms, lenses, etc. A large omnimeter and a sonometer are also soon to arrive from England. Professor Warner now has a well systematized course in mathematics, and everything bids fair for the highest success of this department.

Freshman night with its usual festive carousing occurred last Friday night. As usual the din of tin horns, firearms and the college bell tended to make the hours of the night hideous. Such events can occur but once in a lifetime, and even those of the most sanguine temperaments are prone to forbear complaint and allow it to pass with a smile of contentment. One thing we are always sorry to see, that is the older classmen, fellows who have been in college long enough to have shed their robes of "deviltry," mingling with or leading on their youthful friends. Let Freshman rackets be Freshman rackets, and not a compact of Freshman, Sophomore and Juniors combined.

The progress the college has made during the past few years is certainly encouraging. Through the efforts of President Greenough, together with the assistance of Prof. Goodell (during his short stay in the Legislature), the want and aims of the institution have been made to appear to the public in a clearer light than ever before. During President Greenough's administration North College and the laboratory building have been thoroughly renovated, the new dormitory and agricultural hall, and the stone chapel have been erected; besides nearly all the departments have been supplied with a new outfit of apparatus. Few are without their faults, but however severely the president may be criticised for his business management, he has few equals as a teacher.

The new station laboratory will greatly increase the efficiency of the station. Dr. Goessmann is

much pleased with it. It is surely a valuable addition to the grounds, not alone on account of the very imposing position it occupies, but it is one of the most substantial and best arranged buildings on them. Mr. E. A. Ellsworth, '71, the architect, has surely placed all needful arrangements in the best and most convenient manner. This is but one showing of Mr. Ellsworth's capacity as an architect. In Holyoke, where his office is situated, he has a good reputation, his work ranking with the very best. His buildings are truly architectural, showing taste and character in all their details of arrangement, finish and decoration. It is very pleasing for us to notice such advancement among our alumni.

Prof. C. D. Warner has published his "Elements of Mensuration." The purpose of the book is to enable the student to solve the theoretical and practical questions of mensuration by means of formulae. Most of the formulae are collected from writings of famous mathematicians by patient labor of the author. Some of them are derived from higher mathematics; but they are so simplified that any one can easily apply them in practical use. The book contains about 180 formulae covering 92 pages, and, under each formulae, examples are given. It is divided into six chapters, as follows: Chapter I. Measurement of lines; Chapter II. Angles and arcs; Chapter III. Measurements of plane areas; Chapter IV. Plane curvilinear figures; Chapter V. Surfaces and volumes; Chapter VI. Miscellaneous. It has been used by the class of '88 during the present term and has proved very practical, and will surely be of great assistance to the student hereafter.

"The Practical Fruit Grower" is the title of Prof. Maynard's excellent little manual. The professor presents it to the public to supply a want felt on the part of beginners of fruit culture and those who do not feel disposed to study extensive works of a book that shall be a guide to them and not be costly. He has succeeded admirably, and the book contains 110 pages written in the same plain, practical style that makes his lectures popular among the students. It is filled from cover to cover with valuable information, as much as is found in a two or three dollar standard work. So good and experienced a man as Dr. Hoskins of Vermont, says of it:—"I have read this book attentively, and find it so sound and practical from beginning to end, that, if review means criticism, there seems little to be done. * * * I can say little except in praise of Prof. Maynard's excellent little manual." The book has been bound with every other leaf blank. In this form it is used in the class room, the blanks serving for additional notes.

PERSONAL.

'71.

E. A. Ellsworth's architectural work for the Station does him much credit.

R. W. Lyman has been giving the Seniors an interesting and profitable course in Rural Law, during the present term.

L. A. Nichols is West on a business tour.

Wm. D. Russell is to build himself a fine residence during the coming season.

Wm. Wheeler has written a series of articles on sewerage for the State's Prison, and for various towns in Eastern Massachusetts.

'72.

H. L. Cowles is farming in Amherst.

C. O. Flagg is proprietor of an extensive farm at Abbot Run, R. I.

Prof. Maynard's department at the college is improving every year.

The Kimberly Diamond Fields still seem to contain Salisbury.

G. H. Snow, of Leominster, is a very prominent man and successful farmer in his native town. A fitting man to represent the college on the Board of Trustees.

'73.

Prof. D. P. Penhallow, of McGill University, Montreal, is editor of the *Canadian Record*. He has published a long series of scientific articles of late.

H. B. Simpson, of Stafford Court House, Va., was married last December. He is having fine success on his extensive farm.

A. H. Lyman is a successful druggist at Manistee, Mich.

J. B. Minor is interested in the manufacture of paper boxes at New Britain, Ct., under the firm name of Minor, Nichols & Co.

Dr. Chas. Wellington has very acceptably filled the position of assistant professor in the chemical department, during the past year.

'74.

A. H. Montague is a successful farmer at South Hadley.

H. L. Phelps is the newly-elected deputy and steward of the State Grange.

F. L. Smith has a large business as a woolen manufacturer at Albany, Wis.

'75.

H. S. Carruth was given the degree of B.S. with '85. He is partner in the prosperous book firm of Clarke & Carruth. The college has been the recipient of many valuable works from his shelves.

H. P. Otis is still superintendent in the Emery Wheel Company at Leeds, of which his father, Col. Otis, is president.

G. P. Urner is secretary of the Urner Publishing Co., 70 Warren St., New York.

J. F. Winchester was last year appointed on the Board of Cattle Commissioners by Gov. Robinson.

'76.

John Bellamy is a partner in one of the large hardware stores of Boston. The firm name is Nichols, Bellamy & Co., at 657 Washington St.

W. A. Macleod is director of the "Melville School Corporation" at Boston. He is also president of the M. A. C. alumni association.

W. H. Porter, formerly of Hatfield, is now a farmer at Griswold, Ct.

'77.

Atherton Clark makes a European business trip this summer; his recently married sister and her husband accompanying him on the journey. They sailed last Saturday.

D. H. Benson is chemist and superintendent of the Bradley Fertilizer Co. at North Weymouth.

J. R. Hibbard is a farmer at Stockton, Wis.

'78.

E. C. Choate is ranching at Cheyenne, Wyo., his special line being horses.

H. G. H. Koch is enjoying his honeymoon on a European trip, having been married May 12, 1886.

C. E. Lyman, with his recently elected bride, made the college a short visit, June 10th.

F. H. Osgood is the newly elected president of the Massachusetts Veterinary Association.

Dr. H. E. Stockbridge is soon to publish a treatise in chemical geology, entitled "Rocks and Soils."

Dr. Fred. Tuckerman, with the assistance of Prof. Goodell, has accomplished a most valuable work, and one that will be appreciated by every student ever connected with M. A. C.

Prof. Washburn, of the Storrs School, Ct., expects to go to Germany for the purpose of making his degree, in the near future.

'79.

H. E. Waldron is a farmer at North Rochester, Mass.

S. B. Green is superintendent of W. C. Strong's green-houses and nursery at Newton Highlands.

'80.

W. G. Lee is employed as an assistant in the office of Architect Ellsworth, of Holyoke.

G. A. Ripley is engaged in farming at Worcester, since 1885.

A. H. Stone has been teaching, the past year, at Starr's Military School, Tarrytown, N. Y.

'81.

H. E. Chapin accepted the position of assistant editor of the *American Cultivator*, April 1, 1886.

C. L. Flint is a stock broker in Boston under the firm name of Dole & Flint.

J. L. Hills recently accepted the position of chemist to the Phosphate Mining Co., Limited, at Beaufort, S. C.

Austin Peters is veterinarian to the Mass. Society for the Promotion of Agriculture.

E. B. Rawson has filled the position of principal of the Oakdale School, Lincoln, Va., during the past year.

Dr. F. H. M. Smith is securing a fine practice at Orange, Mass., where he has been located since last February.

Prof. Warner's book on mensuration appeared during the present term. It gives the gist of the subject in a most condensed form, and is admirably adapted to an institution like this.

'82.

F. S. Allen received the degree of M.D. at the University of N. Y., last January.

A letter from W. H. Bishop, of Tongaloo Univ., appeared in *The Country Home* for June.

J. A. Cutler. who graduated in '86 from the Albany Medical School, has an article in the *N. Y. Medical Journal* for April.

J. B. Paige is superintendent of the public schools of Prescott. He was married at Bondville, Dec. 28, 1885.

D. E. Perkins was married at Chelsea, Mar. 18.

W. E. Stone sails for Germany June 26.

W. H. Thurston has become partner and manager of the "Tusculum Farm," Rome, O.

J. E. Wilder was married, April 14, to Laura G. Hurlbut.

'83.

are making arrangements for their first reunion. Six out of ten are expected to be present.

S. C. Bagley has learned the plumber's business.

C. W. Minott has inaugurated a system of irrigation for the benefit of his small fruits.

D. O. Nourse is Dr. Miles's foreman at the M. A. C. farm.

C. H. Preston, assistant chemist, with Dr. Davenport at 161 Tremont St., Boston.

'84.

Chas. Herms has become agricultural editor of the Dickson Co. (Ky.) *Press*, and is also interested in farming.

E. A. Jones is at "Woodfield Farm," a few miles from Philadelphia.

L. Smith is having unparalleled success as agent for the Jeffords Fertilizer Co., Worcester.

'85.

E. W. Allen has been ransacking the State for fertilizers for the State Inspector, the past spring.

G. H. Barber has finished his first year at the New York Medical School.

Goldthwait and Leary are at Harvard; the first in the Medical, the latter in the Divinity School.

We are informed that E. R. Flint expects to sail for Brazil, the coming summer, where he is engaged in dairy farming with L. J. Almeida.

I. N. Taylor was obliged to close his military labors last March, at the Episcopal Schools in New Jersey, on account of ill health.

Dr. Miles has secured a position for Mr. Tekirian on a large farm in Michigan. He expects to spend the summer there in securing a more extended knowledge of practical farming.

SUMMARY.

	Living.	Dead.	Total.
Bach of Science.	229	8	237
Non-Graduates,	373	33	406

DEGREES.

	Alumni.	Non-Grad.	Total.
M.D.,	14	11	25
Ph.D.,	2	1	3
Jur.D.,		1	1
B.D.,	1		1
LL.B.,	7	1	8
D.D.S.,	1	1	2
D.V.S.,	5	1	6
B.A.,	2		2
B.Sc. (B.U.),	106		106
B.Sc. (elsewhere),	1	5	6
C.E.,		1	1
E.M.,		1	1
V.S.,	1	1	2

OCCUPATIONS.

	Alumni.	Non-Grad.	Total.
Ordained Clergymen,	4	1	5
Lawyers,	9	7	16
Pysicians,	11	11	22
Dentists,	1	1	2
Veterinary Surgeons,	6	1	7
Teachers,	15	10	25
Journalists,	8	3	11
Engineers,	16	8	24
Chemists,	14	4	18
Architects,	1		1
Agricultural pursuits,	70	105	175
Business pursuits,	66	157	223
Army,	1	2	3
Navy,		1	1
Miscellaneous,	4	36	40
Unknown,	3	26	29

THE CYCLE.

SUPPLEMENT.

JUNE 22, 1886.

Containing an account of the Exercises of Commencement WeeK, List of Prizes, Etc.

COMMENCEMENT EXERCISES.

We congratulate the Seniors and friends of the institution that they now have a suitable place for Commencement exercises. The new Chapel, neat and tasty as it is, will be found a great deal pleasanter than the Drill hall.

The Freshman celebrated the coming down to the Sophomore seats last Friday evening. The usual instruments for making noise were employed, and as a consequence there were many sleepy heads around the next morning.

The prospects for a large Freshman class in the fall is very encouraging. Several hundred catalogs have been sent to those who have signified their intention of entering. It needs but a few classes of fifty or more to make "Aggie" a bright star among the colleges.

The result of the tennis tournament gave the championship of the college and of his class to R. B. Mackintosh, '86. A. L. Ameida is champion of '87, G. W. Cutler of '88, and C. E. Bliss of '89. A good racket was given to the champion of the college and a pin to each of the winners.

Sunday morning an excellent and impressive dedicatory service was held in the new Chapel. The order of exercises were, the organ voluntary followed by the invocation; singing by the college choir of "Te Deum;" reading by the President of several well selected and fitting passages from the scriptures; singing of the hymn,

O God, beneath thy guiding hand,
Our exiled fathers crossed the sea;

a very fitting prayer by Dr. A. A. Miner of Boston; response by the choir; the baccalaureate sermon by the President; singing of the hymn,

O Thou whose own vast temple stands
Built on earth and sea,
Accept the walls that human hands
Have raised to worship thee;

benediction.

President Greenough's Baccalaureate sermon was an exceedingly able and appropriate one. He took as his text, "Thou shalt love the Lord thy God with all thy mind," Mark xii: 30. His application of it was the relations of intellectual and religious culture. Intellectual culture is not complete unless there is a high endeavor, unless something beyond it is sought. In study one is always impressed with the prevalence of unchanging law. What is wanted is humble, truth-loving men that will go forward, unveil the temple, show men that they can be learners only at the feet of nature, make themselves leaders of men. In this institution there are special reasons why there should be religious instruction given. The object and aim of the institution is to make men. The aim could not be accomplished without religious training. The trend of one's whole life is formed in a great measure during his four years in college, and he must have God's personal guidance. The State's justification for expenditure here is that through the few it may help the may.

DEDICATORY REMARKS.

We are assembled for the first Sabbath in a structure built and furnished by the people of the state. It is but a silent expression of the intent of the citizens that religious worship and religious culture shall be maintained at their institution. Seasons may come and go. Class after class pass to the active duties of life. But the walls shall stand. They will stand as reminders of religious culture, helping those who may come beneath their influence to a high and noble endeavor. In the Library may the choicest fragments of the past be gathered. May each person gain from it something higher than human wisdom. May it induce them to loyalty to God.

MEMBERS OF GRADUATING CLASS.

Not a man of you being physically entrapped you can glorify God in body. But remember that body is not all. Cherish the many lessons you have learned that in whatever path of duty you tread the toil of your head and hands will help you onward toward the life to come.

Dr. A. A. Miner of Boston addressed the College Christian Union and friends Sunday evening. His topic was, "The study of the fundamental questions of life." He considered every person and everything related to every other person and every other thing. A high endeavor was needed to follow this relation. It is the inter-relation that makes the wealth of to-day. We are brothers of one great family, but our individual responsibility is very great. We should shed the warmth of righteousness along our pathway. We can not have anything high or good until others are lifted up.

In the Grinnell prize examination in Agriculture this year the plan has been adopted of having each Senior write an essay of three or four pages of fools-cap on a subject assigned him at the time of writing. These essays were written last Thursday morning. The writers and their subjects are as follows: W. H. Atkins, Rotation of Crops, its practical use, and its applications to science; W. Ayres, Forms of water in the soil, advantage of thorough drainage; D. F. Carpenter, Laying out and construction of drains; C. W. Clapp, Kinds of drains, relative efficiency of open and covered drains, best form and why; R. F. Duncan, General principles of farm practice, illustrated in ancient Agriculture, Pioneer farming and Mixed husbandry; W. A. Eaton, Causes of variation in animals. How are improved characteristics developed and established; C. F. W. Felt, Farm yard manure, its supply, care and efficiency; R. B. Mackintosh, Relation of live stock to a system of farming, origin and advantages of improved breeds; G. S. Stone, Law of heredity: hereditary diseases, atavism; K. Sanborn, In-and-in breeding, cross-breeding, selection of breed stock. The oral examination for the Grinnell prize took place yesterday at 1-30 P. M. in the new Agricultural recitation room. The number of spectators was, as usual, quite small.

The Commencement drills took place at five o'clock yesterday afternoon. At that time the cadets fell in for a short battalion drill after which they were allowed five minutes to change to undress uniform, when they again fell in, in squads for Artillery, Mortar, Sabre and Bayonet drills. The exercises were creditable to the students, especially with the little training they had had in some of the manœuvres.

The Farnsworth prize speaking took place before a large audience last evening at 8 P. M. The speakers and their subjects were as follows: Freshmen—B. L. Hartwell, The March of Attila; W. A. Kellogg, The American Sailor; A. L. Miles, Washington; Y. Okami, War. Sophomores—F. H. Foster, The Battle of Mission Ridge; A. I. Hayward, Battle of Marengo; R. B. Moore, The Union; B. L. Shimer, One Niche Higher. The prize speaking was in the new Chapel instead of the Drill hall as in former years. The judges were Rev. G. S. Dickerman, T. E. Smith, '76, H. P. Davidson.

The D. G. K. fraternity had a very enjoyable reunion last evening. After the prize speaking a short secret sesson was held after which about forty sat down to the annual banquet at Hill's dining rooms. The toasts were very interesting, and the event will be remembered as one of the pleasantest ever had. Several of the older members of the fraternity made touching and appropriate remarks about Col. Clark, their former president.

The Q. T. V. society did not hold any formal reunion. The gathering of a few of the members was enjoyed by all the participants.

The Phi Sigma Kappa society held an informal reception in its chapter rooms. Frank P. Wood catered. A dozen or more of the graduates joined in the festivities.

The College Shakespearian club held a most enjoyable reception in their rooms. The affair passed off with the usual mirth and humor.

The graduation exercises commenced about 10 o'clock this morning. By the request of the Senior class the Faculty appointed six speakers from the class for the Commencement exercises. The speakers and their subjects are as follows: W. H. Atkins, Progress in Nations; D. F. Carpenter, Immigration; W. A. Eaton, Country vs. City Life; C. F. W. Felt, Progress and Science; R. B. Mackintosh, Forestry; G. S. Stone, Socialism.

The diplomas of the college were conferred as usual by the Governor and the Boston University and military diplomas by President Greenough.

The President's reception to the graduating class will occur at his residence this evening at 8 o'clock.

The Aggie choir and quartette furnished excellent music at the exercises Sunday and Monday, and Coenen's Orchestra from Springfield, on Tuesday.

The prizes were awarded as follows:

Farnsworth Gold Medals—Albert I. Hayward, '88; Burt L. Hartwell, '89. *Farnsworth Silver Medals*—B. Luther Shimer, '88; Wm. A. Kellogg, '89. *Hills Botanic Prizes*—No first prize awarded; second, C. W. Clapp, $10.00. *Grinnell Agricultural Prizes*—First, G. S. Stone, $40.00; second, C. W. Clapp, $25.00.

MASSACHUSETTS

AGRICULTURAL COLLEGE.

The age in which we live demands progress in the means and the methods by which young men prepare for the duties of life.

The course of study at the Agricultural College is not the result of traditional methods. It recognizes the fact that the sciences are now applied in every department of practical affairs in a larger degree than ever before. The course makes due provision for the teaching of Physics, Chemistry, Botany, Zoölogy, Geology and Mathematics. Since the dead languages are not required, the time devoted to the study of Latin and Greek in many of our higher institutions can here be given to other studies.

The study of the English Language and Literature, and of Modern Languages, and the frequent exercises in Elocution, furnish excellent opportunities for developing the powers of expression. The study of the Modern Languages, also enables the graduate of the Agricultural College to avail himself of the latest scientific results reached by French and German scholars.

But the course is not limited to the Natural Sciences, Languages, and Mathematics. History, Political Economy, and the Science of Government, with special relations to the government of the United States, receive large attention. Nor are those studies in any sense neglected that are adapted to give one a knowledge of himself and of his highest interests, for Mental and Moral Science constitute an important part of the curriculum.

It is the aim of the College to teach every science, as far as may be, in its relations to Agriculture, and to give all the technical instruction in this department that our facilities allow. The ample grounds of the College, comprising nearly four hundred acres, furnish wide and increasing means of illustration and practical teaching.

Physical training and discipline are promoted by the instruction and training in the military department, under an officer who is a graduate of West Point.

In brief, the object of the course is to form the true man and the effective workman.

The expenses are moderate that the advantages of the Agricultural College may be enjoyed by a large number of young men.

Examination of candidates for admission Wednesday, June 23, and Tuesday, Sept. 7, at 9 A. M.

Catalogues furnished upon application to the President.

THE CYCLE.

VOL. IX. MONDAY, JUNE 20, 1887. NO. 1.

PUBLISHED BY THE ALEPH CHAPTER OF THE Δ. Θ. Χ. FRATERNITY, MASS. AGRICULTURAL COLLEGE.

ORDER OF EXERCISES,

For the Seventeenth Graduation Anniversary, June 19, 20, 21 and 22. 1887.

SUNDAY, June 19.—Baccalaureate Sermon, by Rev. C. S. Walker, Ph. D., Professor of Mental Science, at 10-45 A. M.

Address before the Young Men's Christian Association, by Rev. Noah Porter, D. D., LL. D., Ex-President of Yale University, at 8 P. M.

MONDAY, June 20.—Grinnell Prize Examination in Agriculture, Agr'l Hall, at 10 A. M. and 2 P. M.

Standing Gun Drill, Mortar Practice and Sabre Exercise, at 4-30 P. M.

Kendall Prize Speaking, at 8 P. M.

TUESDAY, June 21.—Alumni Meeting, Old Chapel, at 8-30 A. M.

Commemorative Exercises of the 25th Anniversary of the Congressional Endowment of Agricultural Colleges, at 10-30 A. M.

Dinner of Alumni and Guests, at 2 P. M.

Battalion Drill, at 5 P. M.

Reception at the New Chapel, at 8 P. M.

WEDNESDAY, June 22.—Graduating Exercises, at 10 A. M.

ONCE more do we unfold to the eyes of the public the pages of the CYCLE. No apologies will we offer, and our only hope of reward is that our labors have been such that the eyes may not be dimmed by their perusal. In them we trust the alumni and friends of M. A. C. will find agreeably stated the true work of the institution, the pleasant college news, and such articles of general matter that will be of interest. We fell indebted for the support of the past and hope we merit a continuance.

Too late for notice in our last number were the changes made in our corps of instructors. At the time it was generally thought by those of the public that knew something of the College, and it was known by those connected with the Institution, that the changes were for the better; nor were they in the least disappointed. Never in the history of the College has there been a change that has produced such a beneficial result. To the students has been particularly noticeable the smoothness with which things have moved along. A united, genial but firm and decisive Faculty has been the means of making the students quieter and pleasanter in their ways and manners. The *Rural New Yorker* rightly summed up the influences when it said: "The Mass. Agricultural College is certainly worthy the support of every farmer. Pres. Goodell is a good and efficient man. Major Alvord, the Professor of agriculture, is as good a man as we know of; he is good and true. Prof. Fernald, Professor of veterinary science and natural history, comes from the Maine Agricultural College where he was much respected. Prof. Goessmann is one of our best chemists. The College is well equipped."

WE are now sorry to note the resignation of President Goodell. His connection with the Institution has been from the very beginning and his untiring labors mark every step of advancement in its usefulness. When dark clouds gathered he was foremost in dispelling them. Without a foundation he has started and built up an excellent college library of nearly six thousand volumes. Once before being Acting President and virtually President for some time past, he has always labored faithfully for the good of the Institution. It is exceedingly to be regretted that his physical strength causes this move, but we are glad to learn that as Professor of modern languages and English literature and as librarian he

will remain with us. The work of the year, under his direction, has never been equaled in the history of the College. The Faculty seem to have worked admirably together, and by their manner have imparted an impulse to the students that has stimulated them to a fuller realization of the importance and value of their work. May President Goodell's successor, whoever he may be, meet with the same success.

The question was asked when the Trustees adopted a definite course of study last year—shall it be permanent? We are glad to say that after a year's trial it has proven to be admirably adapted for the work of the College. Those branches bearing particularly upon agricultural science seem to occupy a prominent position in the course, while those that are for the "filling out" or "rounding up" of a student, that he may become "an intelligent producer in times of peace, and an efficient defender in times of war," are woven in in such a manner that one upon graduation can look back and see how one layer upon another has been added until the structure has been capped by a fitting capstone. Now that the course is a permanent one, and one suited for the requirements, it is only to be hoped it will be broadened and kept abreast of the times. One of the first steps we think should be taken is in the English department. It is detrimental to a student to be first under this and then that Professor. He begins to see the methods of one when it becomes time for him to change to another. He is thus tossed from one to another throughout his course. While we recognize that under existing circumstances this cannot be otherwise, we can only hope that in the near future this department will receive the attention it deserves. A thorough course in English, coupled with one in chemistry and the natural sciences, and taught with their special application to agriculture, will bring the best results for an institution like our own, and we feel proud that our Trustees have so wisely recognized it in the laying out of our course.

During the past winter a special course of lectures has been given at the College upon the five breeds of cattle generally classed as dairy animals. Besides these were very interesting ones given on milk production, butter and cheese making, sheep, market gardening, evolution and the nebular hypothesis. All were highly appreciated by the students, and too much cannot be said in praise of supplementing our class room instruction in this manner. It gives the student an excellent opportunity to get assistance in forming opinions of his own, for they were all given by men of experience, who stand high in their respective callings. The setting aside of a portion of the College funds for the employing of the best talent in the different branches taught here is a capital idea, and one we hope will be a permanent and prominent feature of our course.

It is gratifying to see the agricultural press come forward and show up the College in a true and just manner. It has been sad for the friends of the College to see the farmers of the state, through ignorance of the proper sphere of the College and its work, laugh at it when its officers seem to be laboring for the promotion of their interests. They grumble at the outlay of money, they sneer at book farming when they know not themselves, nor anybody else, what the term means, and furthermore, not only do they hinder the work of the College but they injure themselves and their calling. Education will in the future, yes, we might say is to-day, the only hope of success in agricultural pursuits. This education is not that which simply includes agriculture. The educated farmer is not only well versed in agriculture, but in everything that will enable him to become a good and influential citizen. For this end our agricultural colleges broaden their course of study, paying particular attention to agriculture and the natural sciences, and at the same time take up such economic and general branches that will at once enable their graduates to become intelligent tillers of the soil. When the farmers of Massachusetts understand the true aim and scope of their institution, they will place more confidence in it, and support rather than hinder its work. For their enlightenment we look in a great measure to the agricultural press, and we are pleased at its work this past year.

Last Fall the students of M. A. C. received an invitation to attend in a body the First Annual Cattle Show and Fair of the Bay State Agricultural

Society, held at Boston, which was accepted. Accordingly, they left Amherst on the morning of the 6th of October, and reached Boston about 11 A. M., stopping at the Columbus avenue station, from whence they proceeded directly to headquarters in the Boston Cadets' Armory, where a badge for admission to the fair building was given each man.

In the armory a number of cot beds had been put up, and each provided with mattress, blanket and pillow. These were occupied the first night, or rather part of it, by a large share of the students, but sleep did not come to weary eyelids until the storm of pillows had ceased.

The different classes visited the various departments in the fair building, under the guidance of a Professor, and several trips were made to objects of interest in other places, notably, that of the Seniors down the harbor with Lieut. Sage, those of the Juniors, one to the Agassiz Museum at Cambridge with Prof. Fernald, and the other to the market gardens of Arlington with Prof. Maynard, and that of the Sophomores to the laboratories of the Institute of Technology with Prof. Wellington.

The fair was held in the Mechanics' Fair Building, which had been fitted up for the purpose, and consisted of exhibitions of cattle of all kinds, swine, poultry, and all kinds of agricultural implements; in fact, almost everything which has any connection with agricultural operations. In the dairy department the different processes of making and shipping butter were shown.

The students of the College had their headquarters in the fair building in connection with those of the Patrons of Husbandry, in charge of one of their own number.

Some whose homes were in the city, or who had friends living in the vicinity, visited them instead of stopping at the armory, so that there were only a small number who slept there the second night.

Quite a number left the city on Friday, and by Saturday night nearly all were back at the College. Next Monday all started off to their work as if nothing had happened, but every one decided the trip a success, and hopes are entertained that another may be taken at no very distant time.

A most notable improvement has been made at the college barn the past year. For some years past more attention has been given to the field work than to the stock. Farmer Wright has succeeded in bringing the fields into a good state of cultivation; a large increase of crops had been secured; everything seemed in readiness for new and better stock at the barn. The stock formerly consisted of some forty head of pure-bred and grade Ayrshires. From this lot was selected a dozen of the best, all registered or eligible to register in the Ayrshire Herd Book. The rest were disposed of, or put in the fattening stalls. To this herd of Ayrshires has been added, by purchase and by gift, representatives of the Jersey, Guernsey, Holstein-Friesian and Shorthorn breeds, till now we have an excellent foundation for a herd of those breeds generally classed as dairy animals. In the future, as those herds are enlarged and gotten into good working condition, it is expected that their merits will be tried, and that here can be seen an illustration of the comparative value of the different dairy breeds for New England. The interior of the stable has been thoroughly renovated; new floors and improved stanchions, with increased stabling capaccity, being secured. A corn-crib and an ice-house have been erected. One of the gifts was the fine four-year-old "standard bred butter bull" Edithson, 8948, by Mr. Lawson Valentine of Houghton Farm, N. Y. He is by Ramapo out of Lass Edith, and much admired in Jersey circles, having sold for $1500 when a year old. Mr. Herbert Merriam of Weston, Mass., sent from his Cherry Brook Farm the registered yearling Guernsey bull "Cherry Boy," 1252, while Mr. Francis Shaw of New Braintree gave an imported yearling heifer of the same breed, while from Col. A. Warner of Pomfret, Conn., was purchased the imported cow Fanny. The color and appearance of these last three animals indicate in a forcible manner gilt-edged butter and cowslip-tainted cream. From Hon. Wm. A. Russell's herd of Holstein-Friesians was purchased four imported two-year-old heifers, and Mr. Russell gave to the College the yearling bull of the same breed—"Pledge's Empire." Several other animals have been secured, all having extended and well-grounded pedigrees. Although the improvement in the stock has been so marked, that upon the fields has by no means been neglected. The pasture land west of the buildings, which some of the older

classes so clearly remember, is—perhaps we may say as a triumph to their labors—bearing crops of corn, oats, potatoes and beets. The land has received only a dressing of home-mixed fertilizers, all the stable manure having been spread upon the grass land. Beyond the pasture lot, on the northwestern border of the farm, twenty-five acres have been cleared of brush, broken up, and seeded to permanent pasture. This, and the new stock, speaks much for the systematic and judicial management the farm is receiving.

The past year at the Experiment Station has been one, to use Dr. G.'s own words, "of marked activity in its history." Additional sources of income, and the completion of new and remodeling of old buildings, as well as the acquirement of new territory, will greatly enhance the work the coming season.

The bulletins and reports of the past, as well as those that are to come, deserve a careful perusal by every one who is interested in agriculture. The continuation of the work inaugurated in the previous season was carried on last year. The Hatch bill passed by our national legislature will enable the station to greatly enlarge its field of labor.

Among the public there seems to be a lack of knowledge in regard to the relation of the Station to the College.

The Station is an institution entirely separate from the College. It has a Board of Control composed of six members, two appointed by the State Board of Agriculture, two by the Trustees of the College, one by the Massachusetts Society for Promoting Agriculture, and the President of the College. Dr. Goessmann is appointed by the Board as director and chemist, and he employs such assistants as he may require. The grounds which the Station occupy are leased of the College, and the work there carried on is published for the benefit of the agriculturists of the State. The buildings and grounds are open for inspection to all who desire so to do. Though not connected with the College, and though the work is carried on for the farmers of Massachusetts, it is of great value to the officers and students of the College that the Station is situated where they may, if they will, watch the results of the work it carries.

Some have remarked that the Station and College should be one, and the work carried on by the Professors.

This would be unwise with the present working force of the College. Our Professors have now all they can attend to, and their mission is to educate the sons of the farmers, while the Station carries on its work with the idea of benefiting those who are actively engaged in agricultural pursuits.

Should the Station, under the Hatch bill, establish departments of vegetable and animal physiology, veterinary, etc., and choose to place our Professors at the head of these departments, it would be of great aid to the College, but would require the employment of Associate Professors, as is already done in our chemical department.

As it now is, the College has its work to do, and the Station has a line of work to follow out, and the College can profit by it insomuch as its officers and students seem inclined to study its publications or examine the work during its progress.

AGRICULTURAL JOURNALISM.

The rapid advance of agricultural journalism has been one of the most potent means of elevating the farm and making labor thereon a learned profession. Agricultural Colleges and Experiment Stations have been established, and young farmers kept at home on the land of their fathers. All this can be seen by our improved machinery, splendid barns, better stock, and improved land outside the mansion, while within are music, books, beauty and comfort. No stronger statement can be made than in 1847 there were forty-three agricultural patents granted, while in 1866 the number was seventeen hundred and seventy-eight.

It was in that period of journalism known as the sectional or party period, from 1783 to 1833, that we find the first record of any attempt at agricultural journalism. This was made by Mr. John S. Skinner of Baltimore, Md., who issued April 2, 1818, the first number of the *American Farmer*, and conducted it till his death, some thirty-five years later. In 1821 the *Plough Boy* was started at Albany, N. Y., but it lived only a few years. While some have ascribed the founding of this important branch of journalism to Mr. Skinner, others, regardless of his claim, give the credit to Mr.

Thomas Green Fessenden, who, with Mr. T. W. Shephard, established the *New England Farmer* in Boston, Aug., 1822. He died in 1837, and at Mount Auburn, his resting place, is a monument erected to his memory by the Mass. Society for the Promotion of Agriculture and the Mass. Horticultural Society. The names of Joseph Breck, who was at one time connected with the *New England Farmer;* Luther Tucker, known to-day with the *Albany Cultivator* and *Country Gentleman;* and Wm. Buckminster, who, though long since deceased, has left as monuments of his work the *Boston Cultivator and Massachusetts Ploughman*,—stand prominent among the progenitors of this class of journalism. But it is within the present decade, yes, within the present year, that the first regular publication devoted wholly to agricultural investigation and research has been established in America. This journal, called *Agricultural Science*, was established last January at Geneva, N. Y., by Chas. S. Plumb, a graduate in the class of '82 of the Mass. Agricultural College. The prejudice against book and newspaper farming was hard to overcome. Farmers too little appreciated these journals which afforded them pleasures they had to learn to understand and enjoy. To-day, however, it is a poor assumption that a reading farmer is not practically acquainted with all the details of his business. To him they have become educational mediums, informing him of the state of the markets and what his fellow farmers are doing. The farmer to-day comes in from manual labor and delights to take up his paper, in which he places confidence, because he knows it is edited by men that are skilled in husbandry, and published by those whose high principles will not allow rogues in the advertising columns. He has learned to read with care, sifting the good from the bad. He has discovered that the value of newspapers, to his calling, lies in getting hold of the principles contained in them which he may modify and apply after a careful study of his own surroundings. With a political and general paper, a religious newspaper, a literary periodical and an agricultural journal, together with his local paper, the farmer is able to keep himself posted about his calling and the topics of the time. He can then intelligently come forward and grasping his fellow farmer by the hand organize and coöperate with him in elevating and broadening his calling until it shall occupy its true position—the position a country owes its agriculture.

We have many writers of learning and ability, but journalists are rare. Journalism is not wholly writing. The agricultural editor should study the locality in which his paper circulates. He should have a good English education, being thoroughly posted upon matters pertaining to home and foreign politics, law, economics, science and literature. He needs judgment in selecting and genius in arranging the matter of his paper. Quickness of thought and action, coolness of purpose, common sense, patience and punctuality are necessary, and all these without conceit. He should not brag about the largest circulation, but strive for the most worth. He should gain the confidence of his readers by disseminating such information as will interest and instruct them. Not haughtiness, but ability, will accomplish this. Through him should reach the farmers the experiences of those practical men who are desirous of doing their brother farmers good as well as those of the scientists who are studying and bringing to light new discoveries. Public opinion should be scaled and its drift broadened and deepened with the recognition of no party or creed, no North, no South, no East, no West. The agricultural editor should not try to draw others into the calling so much as to improve those already in. Reports of Institute and State Board meetings, the promotion of our great animal industry, the suppression of contagious diseases, the study of useful and injurious insects and fungi, as well as the preservation of our forests, are questions of great importance to the agricultural population as well as the country at large. For aid in the solution of these and other questions we look to our agricultural journals. In them we desire the opinions of practical as well as scientific men. We especially look to our rising agricultural journalists. Where these are to be schooled, or the precise course they should follow, is not known. After a thorough training in one of our agricultural colleges or in the field to become a journalist something still is lacking. Such an establishment as the *New York Herald* or *Tribune* furnishes is the true college for newspaper students. A Prof. James Gordon Bennett or Prof. Horace Greeley would turn out more

real, genuine journalists in one year than the Harvards or the Yales could produce in a generation.

LUMBERING ON THE SIERRAS.

Lumbering is carried on, on the most extensive scale in the region of the Sierra Nevada ranges of mountains.

In California, as is well known, are found the largest trees in the country. Such trees as are made into lumber in the eastern section of the country would hardly be thought worth using where the trees are three to five or more feet in diameter.

The lumbering operations are generally carried on by companies, and, of course, on an extensive basis. Here, in the East, where the logs must be transported some distance, they are generally sold to the mills by the parties cutting them, and, before reaching the consumer, generally pass through a good many hands. In the West as the companies own, not only the forests where they are cutting their trees, but also, their own private railroads, logging camps, cattle, mills, and even the houses for their workmen, they are able to deal almost directly with the consumer.

Let us go to the forests where the trees are growing and follow them in their course until they become finished lumber. We must go first up into the heart of the mountains where the snow lies during the greater part of the year. Here we find a strange scene, choppers, laborers and teamsters, of almost every nationality, working together. Some are engaged in felling trees, some in trimming them, while others are in charge of the teams of bulls used for drawing the logs.

Now a mighty tree totters and falls. Men at once set to work and trim it of its branches, some of which are fully as large as what, in the East, we call good sized logs. Then it is cut up into lengths suitable for drawing, and, chains being attached, it is ready for the teamsters.

Five or six yoke of bulls being attached, the log is started on its journey to the mill.

It is first snaked, or drawn by the bull teams, toward the centre of the tract on which they are operating, to where their private railroad terminates, Here it is quickly swung on to a car by a derrick. Two or three logs make a car load and they tower over a man's head. After the cars are loaded the engine is ready to perform its part of the work.

The engine is a short dummy made expressly for climbing heavy grades. Of course, being on a mountain, it has all its work to do while coming up empty.

Now it starts, down grade all the way, over a road which few people would care to travel but once.

It flies around the curves and over unstable looking bridges but finally arrives, without mishap at the end of its journey.

The railroad terminates on a steep slope, overlooking the mill and mill-pond a thousand feet or more below.

Here they are swung off the cars and dropped into a shoot or trough made of logs, which carries them from the terminus of the railroad to the mill-pond below. As this shoot is greased every day they make the descent of a thousand feet or more, in a few seconds. Sometimes a log jumps from the shoot and, of course, is death to any one it may happen to strike.

The logs strike the water with a roar like thunder, sending the spray high into the air. Then they float quietly along towards the mill, where, by the aid of improved machinery, they are transformed like magic into sleepers, boards, sashes, mouldings, and, in fact, every variety of finished material.

At last, the log, in its finished form is ready to be scattered all over the Western states.

GEOGRAPHY OF THE UNITED STATES.

The United States occupy the central part of the north division of the American Continent. They are bounded on the north by British America, on the east by the Province of New Brunswick and the Atlantic Ocean, on the south by the Gulf of Mexico and the Mexican States, and on the west by the Pacific Ocean. They extend from 25° to 49° north latitude, and from 67° to 125° west longitude, or through 24° of latitude, and 58° of longitude. The entire area of the country is estimated at about 3,000,000 square miles, not including Alaska which contains over 500 square miles. A line drawn on the 40th parallel of latitude, from east to west, would have a length of 2650 miles, and one drawn on the 98th meridian of longitude would have a length of 1600 miles.

The coast line of the country is estimated at 6200

miles and is comparatively unbroken, although there are quite a large number of capes, bays and peninsulas. Numerous islands are scattered along the coast, and most, if not all of them give evidence, both by their geological structure, and their geographical situation, that they were once part of the mainland, and have become separated by some convulsion of nature, or by the continual action of the waters of rivers, and the ocean.

This large area of country is divided by two large chains of mountains, into three great physical sections. The Pacific System; the Central Plain or the Mississippi Valley; and the Appalachian Mountain System and the Atlantic Coast Plain.

The Pacific System. The mountains and plateaus of the Pacific System occupy fully one-third of the whole country. This system is traversed by two great mountain systems from north to south, *i. e.* the Rocky mountains, and the system of California and Oregon. These systems are separated by vast plateaus. The Rocky Mountains extend from the Rio Grande river in a northerly direction. They are divided into a southern section, which extends due north from the Rio Grande, and a northern section, which extends in a northwesterly direction. Near the South Pass, (7492 feet high), an opening in the mountains of the latter section, in Wyoming, rise the Wind River and Big Horn mountains. In the Wind River mountains are the sources of several large rivers, as the Missouri, Colorado and Columbia. The highest peak in this section is Fremont's Peak, which rises to a height of 13,570 feet.

The System of California and Oregon. The chains bordering the great plateau on the west, trend northward from the Colorado river, and divide near 35° north latitude, into the Sierra Nevada and the Coast Ranges, which enclose between them the fertile low plain of California.

The Sierra Nevada range contains among its snow-covered peaks some of the highest mountains of the United States, as Mt. Whitney which rises 14,898 feet, and Mt. Shasta, 14,442 feet. North of Mt. Shasta the massive Cascade chain extends, containing some very high peaks, as Mt. Jefferson, 15,500 feet, and Mt. St. Helens, 15,500 feet. The Columbia river breaks through this chain from east to west. Between the Rocky mountains on the east and the Sierra Nevada and Cascade on the west, there is an arid plateau region. This region is traversed by numerous mountain ranges which divide it into distinct compartments. The highest of these ranges are the Wasatch mountains. Between the Wasatch mountains and the Sierra Nevadas, lies the Great Basin, the rivers and lakes of which have no outlet. The plains of the Columbia lie north of the Great Basin and are only two or three thousand feet in elevation.

The Central Plain or the Mississippi Valley. This great low plain extends from the Great Plains in the west to the Appalachian mountains in the east. It is 1000 miles long and at an average width of 300 miles, its area exceeds 300,000 square miles. The general slope of this plain is southward. The rivers which cross it have in the course of ages scooped out deep beds in the soil, and now flow between steep banks. These latter are usually several miles distant from the stream, leaving broad fertile bottoms subject to inundation. Occasionally however, the high banks stand close upon the river, and appear from the surface of the stream like hills, they are called bluffs. They occur occasionally along the Mississispi, Missouri and other rivers.

The Appalachian Mountain System. This extends from the shores of Nova Scotia to northern Alabama and Georgia, nearly parallel to the shores of the Atlantic ocean. Two peculiar depressions traverse the system, that of the Hudson river and Lake Champlain, and that of the Mohawk river. These divide the system into three distinct sections. These sections are: the New England section, from the Gulf of St. Lawrence to Lake Champlain and the Hudson river. This system consists of the Green and White mountains. The Green mountains attain their greatest height east of Lake Champlain, in Killington Peak (4221 feet), Mt. Mansfield (4430 feet), and others. The White mountains contain the highest peak of the section, Mt. Washington (6288 feet).

The Adirondack mountains make up the second section, trending northeast and southwest. The highest peak is Mt. Marcy (5379 feet).

The third or southern section is much larger than the others, and consists of a large number of ranges and ridges. It is traversed north and south by the

great valley which bears different local names. In Pennsylvania it is called the Cumberland valley, in Virginia the Shenandoah valley. and further south the Tennessee valley. Some of the most important ranges are: the Highlands of the Hudson river, South Mountains of Pennsylvania, Blue Ridge of Virginia, and the Blue Ridge of North Carolina and Georgia.

The Atlantic Plain extends along the eastern base of the Appalachian system. In New England it is about 50 miles wide, in New York about 8 miles, and from thence southward it becomes wider until in the latitude of Cape Hatteras it is 250 miles wide.

MASS. AGRICULTURAL COLLEGE LECTURE COURSE,

DURING THE WINTER OF 1886-7.

The winter months in college seem very long without something to break the monotony, and with a good lecture course this difficulty is overcome to a great extent. With this idea in view the Senior class appointed their lecture committee early in the Fall term. The committee at once set to work to raise funds, which was done by means of a subscription paper, the Faculty and most of the students subscribed very well indeed, also a subscription of fifty dollars from one of the alumni; besides this a small amount was obtained from the sale of tickets to the towns-people.

The first lecture was given Oct. 26, 1886, by Geo. W. Cable of Northampton, Mass. Subject: "Evangeline's Cousins in Louisana." It was a description of the character, mode of living and so forth of the ancient Acadians in Louisana. It was very interesting and enjoyed by all.

Frederic T. Greenhalge of Lowell. lectured Nov. 23. on "Voices of the Immortals." He read poems from the different authors as Longfellow and Whittier.

Dec. 9. A reading was given by Miss Blanche Bidwell of Meriden, Conn., and music by Mrs. Sanderson and Miss Russell of Amherst. Miss Bidwell read us some very fine selections and in a most interesting manner; the music was also very nice, and both were thoroughly appreciated by all.

An interesting lecture was given Jan. 13, 1887, by Rev. A. E. Dunning of Boston. Subject: "Glory and the Way to win it."

Jan. 26. A lecture on "Richard III," by Hon. James S. Grinnell of Greenfield. He gave a very interesting description of Richard III's life and character.

Feb. 16. The Wesleyan Octette gave a fine concert. Warbling and whistling was intermixed with the singing. The choice of selections was excellent. The audience was well pleased as was shown by the many encores.

One of the most popular lectures of the course was given by Professor E. S. Morse of Salem, Feb. 23. Subject: "The art of Illustration." He described very fully the different ways of illustrating; as by steel engravings, wood cuts, lithographs and so forth, also the ways in which postage stamps, coin and paper money are printed. As he talked he illustrated on the blackboard with a crayon. This made it very interesting to all.

The last entertainment of the course, April 28, was a reading and musical entertainment. Reading by Miss Carrie E. Hale of Boston, daughter of the Rev. Edw. E. Hale, D. D.; music by the Madrigal Society of Amherst. Reading and music were enjoyed by all.

The lecture course has consisted of eight entertainments, all of which were quite well received. Several evenings were stormy, thus keeping many at home who would have otherwise attended. Our New Chapel has afforded us an excellent place in which to have these lectures, but if it could be better lighted it would be much pleasanter, for now, under the most favorable circumstances, it seems to be impossible to light it as it should be. We think that perhaps it would be an improvement to select the committee from the three upper classes instead of from simply the Senior class, for in this way more would be interested in it and perhaps it would be supported better. We feel as though this year's course has been an improvement over last year's one, and we hope that next year's will be still greater improved, for a *good* lecture course furnishes both instruction and amusement.

CYCLING.

It was not a great many years ago that a bicycle was something yet to be invented. Even within the last ten to fifteen years the sight of a bicycle was a great curiosity to most people. Now a person

would no more turn to look at one than to look at a horse.

Among sports, that of cycling should rank among the best. It is one of the most healthful and pleasurable. It is one of the most powerful means of strengthening the human body and may be considered a preventive of certain diseases.

Cycle riding not only strengthens the muscles of the lower part of the body, but, also, those of the abdomen, chest, arms and back. The contracting and relaxing of the muscles of the lower extremities in the action of propelling the cycle is very rapid, and cannot fail to strengthen them greatly. Cyclists are generally able to stand long walking tours without much fatigue.

As these muscles become stronger they are, of course, much less liable to disease. It is also found that the capacity of the chest can be greatly increased by cycling. While riding rapidly, one breathes rapidly and powerfully and thus expels the air thoroughly from the lungs. It is well known that medical authorities claim there must be a pleasurable sensation connected with an exercise in order to gain the highest good.

This can surely be found in cycling, for what is there more pleasurable than to be able to roll along at the rate of fifteen miles an hour and yet without a quarter part of the fatigue there would be in walking the same distance.

At present cycling cannot be enjoyed by the mass of people on account of the expense, but every year is lessening that and within a few years that objection will be in a great part, removed.

There are still a few bigoted people who claim that cycling is injurious and dangerous. Yet one will find the majority of the best authorities do not consider it injurious. The plea that it is dangerous is only true to a small extent. Any sport may be considered dangerous. Horseback riding, boating, foot-ball playing and other sports are all dangerous in one sense, but, the dangerous part generally consists in either carelessness or overdoing. The great danger of "headers" so much talked about is exceedingly small. When a person once becomes a fair rider he need never take one if he uses proper care.

Headers are almost always the result of racing or carelessness. People say that as persons have been killed by cycling it cannot be safe, but many more have been killed and injured by other sports than by cycling.

Cycling has now reached the period when it has ceased to be a mere sport. It is now used largely in place of horses, particularly by physicians and other professional men.

The tricycle is in common use in England by postmen, newspaper carriers, telegraph messengers, and others. Bicycles and tricycles in their various forms are being tested and adopted in some of the armies of Europe. In France and Austria certain companies of soldiers are now provided with cycles. Military authorities consider bicycles especially adapted to scout service and for forced marches. In England a combination of tricycles to carry twelve soldiers is now being tested with a view to adopting it in the army.

Cycling is coming to be quite an essential part of college life. Its use in connection with gymnasium exercises can hardly be overestimated.

Let us hope the time is coming when every college student can own his bicycle, and that a college bicycle club may be an additional attraction to bring students to M. A. C.

ENTOMOLOGY.

During the Spring term the Junior class had a very interesting course in entomology, under Prof. C. H. Fernald. His method was to take the four periods of insect life, egg, larva, pupa and imago states, and describe them, then taking the lowest forms and going up to the highest.

The work was confined mostly to those insects injurious to crops, cattle and man; also to many of the more common insects found in everyday life.

When the warm weather came on nets were secured, also the cyanide bottles for killing all insects caught. For a few days the bottles were held at a distance, and even put out on the window sills for fear of inhaling any of the fumes, but the boys got bravely over all fear, and one was seen to inhale the odors as if it were perfumery.

Thursday, May 12, '87, the nets came, and the class sallied forth from the recitation room with the Professor at the head, all anxious to try their luck at collecting. It being quite warm, the boys soon

tired of chasing butterflies, that always kept at a safe distance, and turned their attention to grasshoppers, beetles and moths.

The first day was very successful, considering the inexperience of those handling the nets. As the noon hour approached the boys were attracted to their several boarding-houses, collecting as they went. Many of the people that saw the students with their nets running hither and thither after insects thought they were small boys trying to fly kites; others asked, what are those Freshmen doing with those white things. It is surprising how little attention is given to the gorgeously-colored butterflies, moths and other insects met with in everyday life. It has long been a question whether anything besides mosquitoes and flies abound on the "Aggie Farm," but that is settled now, and almost every day some new insect is captured.

Some that have west windows in their rooms have become very enthusiastic over the work, and even gone so far as to set up all night with a light in their window trying to beguile into their nets those moths that fly by night, while their roommates were being eaten up by mosquitoes that came in through the open window. The mode of doing this is to obtain a strong light to attract the moths; if an ordinary lamp is to be used a reflector is a great addition; the light is set in the window, and the rest remains with the moths. Owing to the number of mosquitoes that come into the room, some have arranged a light wooden box that can be set into the window, open in front and covered with netting on the top. In this way all insects must enter the box, and can be very easily captured; those not wanted are caught and cremated.

Another method used by some is sugaring. This is done by painting trees and fences in the evening with old molasses, the scent of which will draw the moths; then one can go the rounds about 10 or 11 P. M. with a lantern, and capture them with comparative ease, though by some unaccountable means some of the best specimens will disappear.

One bright, sunny afternoon a couple of students determined to find out what Mt. Warner afforded in the way of specimens. Taking the road south of the college grounds we soon reached level ground, where we commenced work. Here only a few of our common cabbage butterflies were secured, but after passing Adamsville several of the large red varieties were captured. Continuing our way for some distance, we found a narrow byway that led us through the bushes and over barbed wire fences. Emerging at last in an open field, we commenced work in earnest. After securing a large Goldsmith beetle and a number of the lepidoptera we continued along the west side of the mountain. We entered a large peach orchard. Immediately all thoughts of collecting vanished till a thorough examination of the prospects of a crop next fall had been made and plans laid for several midnight excursions; but on finding who the owner was our hopes of eating forbidden fruit fell many degrees. This wonderful orchard has been known to bear one good crop, and if one more *good* crop could be secured what times we would have. Taking our nets we continued, and found many new insects in the fields beyond.

Entering the road a short distance from a small saw-mill we wended our way in that direction, but found little of interest there, but something very strange in the park near by attracted our attention. On close examination we found it to be the remains of a hitching-post, very rotten at one end, and bearing every appearance of having been broken off. It brought to our minds a short piece published in the Northampton *Herald*, a few weeks before, of a wonderful exhibition of grit in a small village not many miles from the college. "O! what a tale that post might tell if it were able to talk."

Not wishing to scare the village people we retraced our steps, returning by the south road, collecting a few stray insects on our way. About half-past six we reached our boarding-house, feeling very tired, but pleased with our trip. After having a good meal we were much refreshed, and felt better prepared for the work of pinning and pressing our specimens.

The beetles, flies, bumble-bees and the like were easily disposed of, as they only require to be pinned, while with the butterflies and moths the wings must be spread, which takes a great deal of time and patience to do well. After spending two hours over these latter, we had the privilege of congratulating each other on our good success, and then thought of the flunks sure to occur on the morrow.

ON THE TOTAL DEPRAVITY OF INANIMATE OBJECTS.

When, in those old days, of which we have all read, Mr. and Mrs. Adam were occupying their country villa in the Garden of Eden, you will remember that at the suggestion of a personage, who shall be nameless, Mrs. Adam (*nee* Eve) instigated her better half to enter upon a horticultural venture, which resulted in a somewhat disastrous manner. And, moreover, you are aware that it is the tenet of the larger part of Christianity that as a direct consequence of that bite of apple, mankind has become liable to form a close personal acquaintance with the personage, unmentionable to ears polite, referred to in my opening paragraph, and has offered itself as fuel for a conflagration, the temperature of which it would task old Fahrenheit himself to measure.

"In Adam's fall we sinned all."

But it is not

"Of man's first disobedience, and the fruit
Of that forbidden tree"

that I shall treat (nor is it on fermented hops), but I intend to confine myself strictly to musing upon the total depravity of inanimate objects.

It is well known that there are sects in the Christian church which are disposed to question the doctrine of total depravity as applied to humanity, and to regard the episode in Eden, previously alluded to, as affecting only the immediate perpetrators. But I think there is no one inclined to doubt that inanimate objects sometimes attain a depth of depravity which the word total itself but poorly expresses.

Did you ever get up in the night and grope around for a match, or a bottle, that you didn't hit your ankle against the rocker? It is utterly immaterial in what direction you move; it is a moral certainty that you will run afoul of that rocking-chair. And then, there is the collar button! The collar button is possessed of more of the spirit of the incarnate fiend than any other piece of human mechanism. It takes such positive and evident delight in its vagaries. If dropped, it invariably rolls into the most inaccessible corner in the room, compelling its unfortunate owner, with ——, ahem! raiment *en dishabille*, to stand on his head and almost turn inside out in the endeavor to recover his property. Perhaps as good—or should bad be the word—an example of the particular brand of depravity which we are considering is furnished by the instrument which is penning these lines. The eccentricities of the stylographic pen, however, affect but a small minority of mankind, but those who know will readily assent to my comparison of them to the little girl in the nursery rhyme, who—

"When she was good, she was very good indeed,
And when she was bad, she was horrid!"

I might go on multiplying instances of this kind by the score, but I desist.

Having established the premise that inanimate objects are frequently totally depraved and incapable of goodness, it becomes our duty to consider whether this depravity bears upon the depravity of humanity. A little thought will show an interrelation here. The depraved youth places a bent pin in the chair of innocent boyhood; the pin thus placed partakes of the nature which put it there; it penetrates the integument of innocent boyhood and the communicated depravity is recommunicated to the virtuous youth, who, in anguish of soul, remarks upon the obstruction of water courses for manufacturing purposes. The transmission of depravity from animate to inanimate nature and *vice versa* is obvious.

Any exhibition of total depravity in an animate being, which has a direct and unfavorable influence, may be resented, if the name of the animate being aforesaid is not Sullivan; but in the case of inanimate things, revenge is out of the question. However organized the man may be who hits his ankle against the rocker, however mad he who practices impromptu gymnastics in search of his collar button, the one never kicks the chair—that is, never but once—and the other doesn't throw his stud out of the window. Here the lords of creation submit to the inevitable, and are conquered by some petty triviality.

The most ardent Universalist must sometimes desire a—Gehenna, wherein to wish a "busted" suspender. Even the best of men, under strong provocation, are apt to consign a totally depraved object to the venerable father of all evil, thus manifesting the latent idea in humanity that there is retribution for the "cussedness" of some of our inanimate tormentors.

Deep thought on my part has been unable to disclose any remedy for the sad state of affairs which I have indicated.

In the human race much may be accomplished by youthful training and by education, but it is quite useless to try thus to ameliorate the condition of the totally depraved shoestring, or keep it from breaking when the wearer is in a hurry. You can't educate a collar button. You may train up a rocking-chair in the way it should go, "from early morn till dewy eve," until your mouth is bald and your head toothless, but in the still watches of the night its natural obstinacy will inevitably impel it to leave "the way it should go," and get in your way, to the imminent peril of your shins and your temper.

The only remedy is to "grin and bear it." But may we not cherish the hope that in the bright some other day we may dwell in rsgions where the depraved inanimate is unknown, and where, if our halos fit and our lyres are not out of tune, we may be as happy as the day is long on the twenty-first of December!

REMINISCENCES OF A PROSPECTOR.

The few years of my life spent among the mountains and foot-hills of the Sierra Nevadas are full of incidents always recalled with pleasure, and which reviewed here, may be of interest to some of the readers of the CYCLE.

A few years ago Mr. Clark, of the class of '77, gave you a very pleasing account of "How We Crossed the Rubicon." I will tell you how we crossed the Hog's Back to prospect Bald Mountain.

Early in our mining career, Mr. Clark and myself made the acquaintance of a prospector of considerable experience—a Norwegian by the name of Thorsen. Thorsen was a fine looking fellow, of powerful physique, with an active, restless nature, receiving its greatest satisfaction from those expeditions into the mountains which took him into new and strange places. Our own love of adventure had rather awakened our admiration for Thorsen, and we soon made frequent prospecting trips together.

Abont this time Thorsen, with pick and pan, and roll of blankets on his back, had made a trip to Northern California—a round trip of several hundred miles—partly by rail, partly by stage, and tramping many a lonely mile of rugged mountain trail. On his return he related a strange story told him by an old miner with whom he had camped one night, and who had grown communicative under the warming influences of a friendly glass—of how in "early days" he had mined a placer claim in the vicinity of Bald Mountain, when he had found in the tailings from his mine rich specimens of float quartz, and later discovered a vein of quartz crossing the gulch which seemed to be of the same nature, and was undoubtedly the source of the rich float.

In those early days of rich placers, quartz mining was unknown to the California miner. But he had kept the knowledge of this vein a secret, and after mining the bed of the gulch where it crossed, had allowed the tailings to fill in again, piling the heavier boulders on the sides, thus effectually concealing the vein. These placers exhausted, he had drifted to other diggings; but since the development of quartz mining, had always intended to return and prospect this ledge, delaying from year to year on account of the urgency of other interests.

Thorsen had followed this narration closely, noting the description, location, and landmarks cited, determinining to prospect for that ledge himself.

To say that we were interested, and that his invitation to participate in this prospecting trip as partners was highly appreciated, is a mild statement of the facts: He soon persuaded us that it was a perfectly square deal on our part, as far as the first discoverer was concerned, for he—Thorsen—should prospect it whether we did or not; that his informer was likely to get friendly drunk and tell some one else, if he had not already done so; that procrastination, the most prominent characteristic of his genial nature, would never permit the fulfilment of his good intentions, so long as his present claim would supply him with grub, tobacco, and snake medicine; and that in the interest of mankind if was our duty to discover, if possible, and develop this latent resource of our country's wealth.

It was past the middle of November, and to start on such an expedition to an altitude of over six thousand feet in the Sierra Nevada mountains was a hazardous undertaking. When the fall rains set in in the valleys and foot-hills, then the heavy snowfalls commence on the mountains. And to be caught in one of those storms far from any provisioned hab-

itation, is to be lost—almost certain death. To be caught where there is shelter and provisions means long imprisonment, unless one has snow-shoes and can use them.

It had been a beautiful autumn season — the weather was like that of early September, with no indication of storm. If we could only have two weeks of such weather, we could make a preliminary exploration, and decide, perhaps, whether it would be advisable to prepare for more extensive prospecting the following summer. There was no time to be wasted; I think we started the very next day. Thorsen carried two pairs of heavy blankets in a pack strapped on his shoulders, and his prospector's pick and pan; Clark carried a roll of blankets and carbine; I also had a roll of blankets, a skillet, coffee pot and hatchet. We had provisions distributed among us.

It was a beautiful morning, and we felt fully the inspiration of the time, place and cause. We sniffed the fortune afar off, and the delicious bracing mountain air about us, as we left the dusty road out of Georgetown, and climbed the trail up Hodgkiss Hill, through the thickets of manzanita and chapparal, up among the big pine trees, along the mountain sides—up and down, from gulch to hill, and hill to gulch, along sharp ridges, from where we could catch a pretty view of some small valley, or deep cañon, and occasionally an unexpeted glimpse of the great valley of the Sacramento through some open ing between the mountains, and stretching away in the distance, beyond the great river, the blue line of the Coast Range. Ah, the exhiliration of such places, such scenes, and such pure mountain air, cannot be described!

We were full of vim—able to walk to China, if only we could reach it by the Sierra Nevada Range. The very thought of climbing higher into these mountains seemed to stimulate us. Thorsen was a remarkable pedestrian; Clark proved himself a worthy rival, and I think I was pretty good myself, though my legs were noticeably shorter, either at rest or in motion, than those of my partners.

Some six miles over such trails brought us to Otter Creek Cañon. A stone's throw, it looked to the trail on the further side; but we found it a long distance, winding zig-zag down the steep mountain side to the swift stream at its bottom, and then up again, back and forth along the precipitous bluffs. We began to feel our packs a little, but the beauty of the scenery around us, as we climbed the rugged trail, was ample compensation.

Slowly but surely we toiled to the top, and then a couple of miles brought us to Volcanoville, a relic of the glory of "early days"—a cluster of cabins in a state of slow decline. A short distance from Volcanoville, and we were enabled to realize more fully the extent of our undertaking. Stretched before us and from two thousand to twenty-five hundred feet below us, lay the great cañon of the Middle Fork of the American river. To the west, rugged mountains seemed to intercept its course, and it was lost from view. Fold upon fold of massive mountains rose to the eastward, their sides seamed with dark, mysterious gorges, their crests tipped with the everlasting snows, like a line of fleecy clouds along the distant horizon.

On the opposite heights stood out boldly against the clear sky the mountain town of Michigan Bluffs, almost within rifle range, it looked. Seventy-five miles was the shortest distance by which it could be reached from Volcanoville, with a wagon. We reached it that night a little before dark. I have not space to describe our descent to the river, which looked like a mere thread, so far away below us; Otter Creek Cañon was a mild affair in comparison. An hour or more of this steep descent made our knees feel shaky.

It was noon or after when we reached Horse-shoe Bend and crossed the river; here we lunched and rested a short time. Just below the Bend lay Murderer's Bar. From here a mountaineer with packhorse carried our packs to the summit, and we found it all we could do to carry ourselves then.

At every turn of the trail as we ascended we commanded a more extensive view. We could now perceive the beauty and grandeur of what we had so lately passed.

It was about the middle of the afternoon when we reached the summit. From here the ascent was almost continuous but more gradual. We put up for the night at a little mountain boarding-house, husbanding our provisions for the wilds into which we were to penetrate, also adding to our store from that of our host. He tried faithfully to dissuade us from proceeding further, as he regarded our enter-

prise a dangerous one; but finding us determined, bade us good-bye on the following morning, with many wishes for our good luck.

Continuing on our way, we soon entered the great forests of sugar pine—grand old trees, often measuring twenty-five and thirty feet in circumference. For hours we traveled through this heavy timber. down long hills and up longer ones—sometimes traversing sharp ridges overlooking on either side the dark tops of the forest beneath.

In this lonely region we were startled to find a guide-board "To Damascus," and not far from this reminder of the scenes of Paul's persecutions, we were in like manner directed to "Sunny South Mine," "Ground Hog's Glory," and "Bogus Thunder."

The "Hog's Back" is a long ridge with a broad sloping summit, the water-shed between the North and Middle Forks of the American river. We traveled miles along the back of this huge animal. At times we could see the Central Pacific railroad looking like a line stretched along the tops of the bluffs far away to the north, and once we saw a train shoot along this line; it looked very diminutive in the distance.

At noon of this day we reached Indian Springs, where we rested and lunched. There was a log cabin here, the home of a ditch-tender, who looked after a ditch property, supplying water to the mines and ranches in the foot-hills.

Our way from here to Secret House—the next stage of our journey—was of much the same character. We reached the latter place about the middle of the afternoon, and here we halted for rest, making the acquaintance of the proprietor, and learning what we could of trails, distances, etc.

We had decided to make Canada Hill the objective point of our journey, camping at Reed's mine while we prospected the vicinity. Mr. Reed was a San Francisco man who had opened quite an extensive mine in an ancient river channel at Canada Hill. He was still at the mine with one man. We thought we could find shelter and information of the surrounding country, and perhaps company while we were camped there.

From the Secret House we found our way more toilsome than any since leaving the bluffs of the Middle Fork. We encountered long steep ascents that seemed without end, at times. We picked our way cautiously along precipitous walls and steep declivities where huge boulders looked as if a breath would send them thundering to the deep abysses below. We succeeded in starting one large boulder—all that we could move—and watched it with breathless wonder as it went bounding, crashing, with a thousand hideous echoes, into the depths.

It began to grow dark, and we saw no sign of Reed's. We didn't want to camp and sleep in the open air, for it was biting cold, and after our long, tedious journey would hardly be safe. Fortunately at this juncture we met a man in the dusk, who directed us, informing us we had gone quite a distance out of the way. Tired as we were, we soon returned to the right trail, which quickly brought us to the welcome light of Reed's cabin. No guest at a fashionable hotel ever enjoyed the luxuries of his surroundings more than we did the hospitality of that rough mining camp that night. We were not permitted to get our supper, and after the wants of the inner man—which were very urgent—had been satisfied, we gathered around the comforting fire and smoked, and discussed religious topics and the Chinese problem, and at a late hour we rolled into our blankets upon the floor and soundly slept the sleep of the weary if not of the just.

We had come in two days between forty and fifty miles, over most difficult mountain trails. We learned from Mr. Reed what he knew of the early history of this mining camp; that there were several promising quartz claims located, one developed considerably more than the others, yielding fine prospects, the owner then being in San Francisco negotiating the sale of his property. To shorten my story as much as possible, we visited this mine, and comparing notes, were convinced beyond a doubt that this was the ledge we were in search of. Having already found that this was a common experience of the professional prospector, we wasted no time in regrets, but turned our attention to other ledges. Judging from the early history of the placers, and the character of these quartz veins, we believed it to be a good section to prospect.

We were camped over six thousand feet above the sea. Although the nights were bitter cold at this altitude, during the day when the sun was high the temperature was mild and the air just a little

hazy like our Indian Summer. Bald Mountain loomed way above us, its bare summit towering far above the timber line. I think it was on our third morning here, we determined to prospect Bald Mountain as far as we were able. We had climbed up and climbed down collecting samples and enjoying keenly the excitement of our wild surroundings, when we noticed that the hazy atmosphere seemed to thicken. At noon we were in a deep narrow cañon near the base of the great mountain; the sun had disappeared and dark clouds were gathering above us. We dared not proceed further, and immediately started for camp. Our powers of walking were put to the severest test. We reached camp about two o'clock, ate a good dinner, shouldered our packs and started for Georgetown. I do not remember the time we made to Secret House, but it was remarkable. We had intended stopping there, but had done so well that we kept right on—fleeing from the dreaded storm. We were a weary trio when we reached Indian Springs at night, the darkness settling over the forest so that we could scarcely find our way, but occasional big drops of rain spurred us on.

The ditch tender received us rather gruffly, demurring at our request for shelter, but finally yielded to our persuasions. Once under his roof, and the pipe of peace produced, his gruff nature seemed to soften, and we discovered that it had a very hospitable side. This old man had lived alone here for years, making an annual trip to the settlements below during the summer, being shut in through the long winter months without any human companionship. The old fellow insisted upon our occupying an extra bunk he had; so wedging ourselves in spoon-fashion, we composed, or rather discomposed ourselves for the night. For a time all was silent, save the soughing of the wind among the trees, and the patter of the rain. Suddenly the silence was broken by a strange, smothered, gasping sound, as if from some monster at a distance. It drew nearer—sharp, crakling musketry, and low rumbling peals of artillery intermingled with muffled groans. Our excitement was intense. Then as if by a flash of lightning, the truth dawned upon us. It was "Bogus Thunder"—the old man was snoring!

Long before light, we were up, and found the ground white with snow. After a good breakfast, we slung our packs over our shoulders again, and leaving the old ditch tender to his solitude, struck out through the woods in the dusky light of dawn. The snow was falling thick and fast. Several times a deer, startled by our approach, bounded out from the shelter of a tree, across the trail before us. The snow balled up on our feet, making our progress very difficult, but we pressed on, fearing to delay. In a few hours the snow, continually growing heavier and more moist, had changed to rain. We were below the snow line and were safe. The mud now impeded our progress almost as badly as the snow had done.

Our clothes were fairly drenched. We pushed on to Michigan Bluffs, never stopping but hurrying on toward Horse-shoe Bend. We reached the latter place about one o'clock, rested and took our lunch. Crossing the river, we commenced the toilsome ascent to Volcanoville. The rain had poured since we got below the snow line, and we were soaked through and through. Our packs and clothes were like lead. When half way to the summit, a thick fog settled around us, so that we could scarcely see each other. About four o'clock we reached Volcanoville and the hospitable doors of the Parkhurst House. It makes me hungry now to think of our supper there. Ah, Bill, while memory is spared us, we will never forget how royally you entertained us that night!

After supper, we sat around the large stove in the bar-room, drying first one side and then the other. Bill resurrected an old fiddle from under the bar, which he insisted that I, as musician of the company, should manipulate. Soon the soft, sweet strains of the "Arkansaw Traveller" with variations, and "Sweet Home" without any, rose with the clouds of steam, from around that stove, and floated out upon the night air—I guess. Before long, the fiddle had unlatched the door of the kitchen, and we had an attentive audience there.

The weather was fine next day. The rain had brightened everything. The clear fresh foliage was loaded with myriads of shining rain-drops. We had been so thoroughly soaked the day before, we delayed our start until the bushes were dry.

When we reachod Georgetown that afternoon, Clark found a box at the express office from home.

The next day was Thanksgiving and he got dinner. Nearly everything on the bill of fare was from Amherst, except hashed meat of toast; this was Californian—the meat chopped on a board with a hatchet. W. L. G.

"The curfew tolls the knell of parting day,"
The evening zephyrs blow o'er land and sea,
And as they idly through the tree-tops stray,
My thoughts, dear pard, go straying off to thee.

Across New England's hills and streams they go—
Past Mohawk's farms—beyond Niagara's roar—
O'er prairies, mountains, to the sunset glow
That paints the waves on California's shore.

That favored land! whose hills are ribbed with gold,
From San Diego's plains to Siskiyou;
Whose valleys smile beneath the mountains bold,
Whose snow-crowned summits pierce the sky of blue.

From where Fort Yuma cools her burning sands
In Colorado's waters, clear and blue,
To where Mt. Shasta, silent sentry, stands
Majestic in her robe of dazzling hue;

From mountain chains where rushing rivers roar,
And giant cedars whisper in the breeze,
To where the sparkling sands along the shore
Are gently petted by Pacific seas.

O land of marvels! Even at thy birth
Thy name on History's page was marked in gold;
And in the farthest corners of the earth
Thy fame is sung—thy wondrous story told.

And as the years roll on thy fame shall grow,
Thy flower-clad homes on every side increase,
And California to the world shall show
A happy people in a land of peace.

Once more, in thought, those snowy hills I see;
The deep, dark cañons stretch before my view—
The mountain meadows fill my heart with glee—
Once more I 'm camped on Sailor Flat with you.

What matter now that little gold we found?
Our lives are richer for the life there led,
And to our latest breath our hearts will bound
When California's name is heard or read.

—A. C. to W. G. L.

COLLEGE SPORTS AND PASTIMES.

We would again call the attention of our readers to the need of a gymnasium at M. A. C., where exercise might be had, especially during the winter term when there are not as good opportunities for out of door sports as at other seasons of the year.

If the drill hall could be arranged up so that it could be heated, the necessary apparatus might be put in, and in addition the hall would be much more comfortable for drilling.

Our military drill is a very good thing for the students, giving them some knowledge of military matters, besides making well formed men of them. But other exercise is needed to better enable them to apply themselves to their studies.

There was quite an interest shown in Foot-Ball last fall, and by the work which our team did, it seems that the students can do something if they only try. In their work the team should have the support of the whole college. Of the three match games played our team won two. Besides these match games there were the customary class games. Below are given the scores of the match games.

Aggie	vs. Amherst,	5–15
"	" Williston,	7–6
"	" Tufts,	6–5

Lawn Tennis is still quite popular with the students, and it furnishes good, healthful exercise. Several courts are kept in good condition, and on these games may be seen everyday. There are a number of men, who, with practice, might become first class players. But the playing of Tennis is somewhat lessened by the increased interest in Base-Ball, the present term. During the winter term the drill hall furnishes a place for playing Tennis, a court having been laid out.

As stated before, particular interest has been shown in Base-Ball the present term, and a team has been picked out, which, although it has not always had the success to be wished for, still has shown that there is some base-ball material in the college which should be developed.

During the winter term there was some talk on the subject of building a toboggan slide, but as the project did not meet the approving eyes of enough of the students, it was abandoned. Instead quite a number of men, mostly from the lowest class, invested their spare change in lumber and enjoyed many happy (also unhappy) moments in "skeeing." Oh! what a delightful sport, standing up to your knees in snow, vainly trying to fasten your feet to two long, narrow strips of board. What a picture might be drawn, of one of the above mentioned strips of board, gliding smoothly along on the crust, followed by its discomfited owner. This sport as

it was seen seemed to give plenty of exercise and we would recommend it to those who long for something to do when the snow is on the ground. There was also some coasting done on a large double runner, which would have furnished scenes for an artist, for some of the men were *expert* steerers, and succeeded very well in their efforts to overturn the load they were piloting down. But no bones were broken and all seemed to enjoy the sport. Snow-balling was the fashionable sport during some of the bright winter days, when the sight of an open window in a room being too great a temptation to resist, it would immediately become an object of interest. But such affairs sometimes ended in a manner, not for the best interests of the window.

Our college is situated in a pleasant valley, surrounded by thickly wooded mountains on all sides, which furnish homes for different kinds of game, and some of our men improve the opportunity thus offered by going on a ramble with their guns, but they never seem to have much luck unless they happen to strike a watermelon patch somewhere in the backwoods. The most common mode of hunting for this term has been to fire out of the back window, for the purpose of scaring away any stray Soph's. who may be lurking about in the entries.

The country around also abounds in flowers of all kinds, furnishing a rich harvest to the student botanist, who may be wandering around in search of specimens. As every student is required to collect and mount a certain number of specimens, plenty of exercise is sure to be had in the discharge of duty. The hill known as the "Vineyard" is noted for the number and quality of the specimens which can be gathered there at certain seasons of the year. A word must be said in regard to the target practice. A new target butt has been built at the rifle range, and better facilities are now had for the target practice, which has taken place during the present term every Saturday morning after Inspection of Rooms. Judging from some of the scores made, the way is yet open for improvement, which comes only by practice. Cartridges are furnished by the Government.

For those who are so inclined, there are numerous roads, on which many pleasant drives can be had, for example, one to Mt. Holyoke Seminary or Smith College, especially for those who are fortunate enough to have "cousins" at either of these places.

Then there are small mountain peaks which should be scaled by every student sometime during his course at M. A. C., namely, Holyoke, Toby and Sugar Loaf.

From the summit of the first named mountain, which lies off to the southwest of the college, an excellent view of the surrounding country is obtained which is well worth seeing. To reach Sugar Loaf and Toby one must go in a northerly direction. From the summit of the former, which takes its name from its peculiar shape, another fine view may be obtained.

There are many other experiences happening to students which we will not mention.

HEADERS.

But not on the cycle.

Tennis is quite popular—'pecially suits.

April 24.—Silk hats appear, *so far*, and no farther.

"Say, fellows, what is *decorated* (decorticated) cotton-seed cake, anyway?"

Juniors versus Bugs.—"We 'll call the roll down in the lot."—*Drag-on-flies.*

Drones in the hive are the biggest wind-bags. Catcher, don 't *burn* your fingers.

"Little folks should be seen and not heard."—Good advice for editors of "College Monthly."

The Senior class was represented at Boston University this year by Edw. W. Barrett.

The Juniors and Freshmen should rightly back up each other, both being after *specimens.*

"Well, don 't go to sleep, Mr. F——." "Well, sleep again?" "Can 't you keep awake?"

Prof. M.—"Mr. R., what is annular budding?"

Mr. R. (honestly).—"That is budding every year." Applause.

The interest in tennis is somewhat abated this year. Although the courts were laid out, but little care has been taken of them.

The new chapel furnishes an admirable place for all commencement exercises. The drill hall, however, will be used for the Alumni dinner Tuesday.

Only eight days of Senior vacation, and military must be attended to. It must be tedious to wait around a whole week for four hours' drill. Too bad, what are we all coming to?

Since the reign of Thayer, hash-house cannot be applied to the college boarding-house. Mr. Burnette is giving good satisfaction. He is a good manager, his wife a good cook, and the servant is a *daisy*.

The Seniors, with Dr. Fernald and his wife, made a geological excursion to Mt. Holyoke. After examining the mountain to their satisfaction and partaking of a lunch, the class separated. South Hadley, Northampton and Holyoke were among the attractive places then.

In closing these few anecdotes we can appropriately record the following:—

Prof.—"Mr. H., it seems to me that was rather a long demonstration."

Mr. H.—"Yes, sir; but we got there just the same."

It is to be hoped another season our ball nine will play with more confidence in each other. Several of the games that have been lost, however, were not wholly the fault of the team. Emergencies are always liable to occur, and those that are able to meet them will be the winners.

Elsewhere in this issue will be found an exceedingly interesting account of incidents relative to life in search of gold in California. Also a poem written by one of the parties spoken of in the above narrative to the other. It was not intended for publication, but through courtesy we have been able to give it to our readers.

The Grinnell Prize Examination in Agriculture will be conducted on a somewhat larger scale this year than formerly. Each man was assigned a subject, upon which he was obliged to write a short, concise essay. These essays have been read and discussed in the class-room, and to-day will be read before the examining committee.

Dr. W. to Seniors.—"Gentlemen, this is a primary book, intended for grammar and high-school scholars, and it ought not to trouble you." Sample questions:—

"How much time did you study this lesson?"

"What is your religion?"

"Are you a Christian?"

"Tell the stories in this book?"

Three of the graduating class will go to work at the Experiment Station. Two will enter as chemists, while the third will be an assistant in the field and feeding department. As the work at the Station increases, more numerous are the opportunities offered to the graduates of the College. Several who have been under Dr. Goessmann have secured very good positions.

On Thursday, June 2, the Freshmen had their annual mountain day. In spite of the drizzling rain they started, under the guidance of Prof. Maynard, for the Holyoke range. All descriptions of teams were represented, from shanks' mare to a double team. On arriving at the Devil's Garden they camped by the side of the road. After partaking of a lunch the ascent of the mountain was made. Many rare specimens were obtained, and and some wonderful feats of—shall we call it tumbling—were performed. On the way down a spring was discovered which would fill a cup in about five minutes, and there were soon a line of thirty men waiting for something to drink. Further down two brave men killed a rattlesnake (?), but which to more learned eyes proved to be a house adder. After another lunch the march to the Garden of Eden (commonly called a swamp) was begun, but before it ended we were sorry to note many "sneaks," a very rare specimen of the vegetable kingdom in such localities. At all hours of the night some of the wanderers were *heard* returning. The next day, in the class-room, the Professor asked one gentleman what he found on the mountain. The reply was: "I found a white flower."

Wanted for the Library of the Massachusetts Agricultural College, the following years of the CYCLE: Supplement to the CYCLE for 1879, the CYCLE and Supplement for 1881, Supplement to the CYCLE for 1884; also all numbers of the *Register* except 1876. Who will help complete the file?

H. H. GOODELL.

CYCLE SUPPLEMENT.

The CYCLE Supplement will be issued as usual at the close of graduation exercises Tuesday morning. It will contain a complete account of Commencement exercises, the list of prizes, and other interesting matter. Do not fail to purchase a copy. Price two cents.

PERSONAL.

'71.

Wm. P. Birnie is in the paper business in Springfield.

Wm. H. Bowker gave his interesting lecture entitled "Homeopathy in Agriculture," to the students this last winter.

E. A. Ellsworth has a growing business as an architect in Holyoke.

W. D. Russell has lately erected a nice residence in Turners Falls, where he has been very successful as manager of the Montague Paper Co.

E. E. Thompson is a teacher in Brockton.

It is very gratifying to record Wm. Wheeler's appointment as a Trustee of the College.

'72.

J. W. Clark is a successful fruit culturist in North Hadley.

Dr. J. C. Cutter, who has been connected with the Agricultural College in Japan, has returned to his home in Warren.

Rev. E. N. Dyer is settled in California.

"Forest Orchard" is the name of Prof. Maynard's plantation in Northboro, with which he is having good success.

'73.

W. S. Leland has been married this season. He is still an officer at the State Prison in Concord.

J. H. Webb has a very successful law practice in New Haven, Conn.

The engagement of Dr. Chas. Wellington, who proves an excellent Professor of Chemistry at the College, and Miss Grace Huntington of Amherst is announced. He has purchased a building lot and will erect a residence this season.

'74.

E. H. Libby now conducts the *American Garden* in New York instead of Greenfield.

H. L. Phelps is building up a successful fertilizer business, and is located at Southampton.

'75.

J. A. Barri is still associated with E. D. Chittenden, in the fertilizer business in Bridgeport, Conn.

Madison Bunker has an excellent practice as a veterinarian, in Newton.

T. R. Callender is a florist at Wellesley Hills.

H. S. Carruth very kindly gave $50 to our last winter's lecture course, and has done a good deal for the library.

P. M. Harwood of Barre prides himself on having built up one of the most promising Holstein-Friesian herds in New England. One of his animals won the sweepstakes prize for best milch cow, any age or breed, at the Bay State Fair in Boston, last Fall.

A. A. Southwick is farming in Millville, Worcester Co.

'76.

Instead of being the Farnsworth Prize Speaking this Commencement it is the Kendall Prize Speaking, Hiram Kendall of Providence, R. I. being the donor of the prizes.

W. A. Macleod is in Scotland on a trip.

C. W. McConnell is a dentist on Tremont St. in Boston.

Wm. H. Porter is engaged in farming at Jewett City, Conn.

'77.

Atherton Clark is still with R. H. Stearns & Co., Boston. Is now in England.

Charles Brewer is farming in Pelham.

'78.

D. E. Baker, M. D., Newton Lower Falls, was married to Miss Lord, daughter of the physician whom he succeeded.

A. A. Brigham, Marlboro, is Sec'y Mass. State Grange, and Deputy in charge of the state of Rhode Island. He has done some good work in that state the past year.

Henry Koch Heath, neé H. G. H. Koch, is in New York.

C. O. Lovell is gaining quite a reputation as a photographer in Northampton. He has been quite successful with composite photography.

C. E. Lyman and Lockwood Myrick have been married this year. The former is farming in Middlefield, Conn., while the latter is New England agent of Williams, Clark & Co., and located at Northboro.

H. E. Stockbridge has lengthened out his contract with the Japan Government as chemist.

John Hosea Washburn and Martha Williams Merrow were married Thursday, May 26, 1887. They are now on their way to Germany.

'79.

S. B. Green since last fall has been Superintendent of the Botanic Department M. A. C.

W. A. Sherman, M. D., D. V. S., Lowell.

George P. Smith is farming in Sunderland.

'80.

Wm. G. Lee is now at work for Gardner, architect, Springfield.

'81.

C. L. Flint, Jr. made the College a visit on his wedding tour last fall. He is located in Boston.

Austin Peters, D. V. S. gave two very interesting lectures to the Seniors on veterinary subjects, last spring.

E. B. Rawson, who spent last summer in Amherst at the Summer School of Languages, returned to Va. in the fall. He is teaching in Lincoln.

Prof. C. D. Warner was married last fall. He still occupies the mathematical chair at M. A. C.

Arthur Whitaker is farming in Needham. He made the College a visit last fall.

'82.

F. S. Allen, who stood at the head of his class in both the medical and veterinary college in New York, is now located as a veterinary surgeon on S. W. Corner 5th and Locust Sts., Philadelphia.

C. E. Beach is manager of Vine Hill and Ridge Farms, West Hartford, Conn.

Geo. D. Howe, North Hadley, was married last fall to Miss Florence Clark of Northampton.

Herbert Myrick, Agricultural editor New England *Homestead* and *Farm and Home*, Phelps Publishing Co., Springfield, Mass., is now traveling in Dakota, and the West.

C. S. Plumb has started the first publication devoted wholly to agricultural research and investigation in America. It is called the *Agricultural Science*, and is published by the editor at Geneva, N. Y.

W. E. Stone is in Göttingen, Germany, conducting studies in botany and chemistry.

L. R. Taft is professor of horticulture and zoölogy at the University of the State of Missouri, Columbia, Mo.

J. S. Williams of Glastonbury, Conn., is married.

'83.

ANNOUNCEMENTS.

D. O. Nourse of Bolton and Miss Nellie Shaw of Mountainville, N. Y.

J. B. Lindsey of Pawtucket, R. I., and Miss H. Fannie Dickinson of Amherst.

Homer J. Wheeler sails for Germany July 6. He will take a course in chemistry at Göttingen.

MARRIED.

E. A. Bishop of Talladega, Ala., and Miss Maybelle Slocum.

C. W. Minott has charge of "Forest Orchard," Northboro.

'84.

H. D. Holland is married, and in business with his father in Amherst.

Llewellyn Smith is with Jefferds Fertilizer Co., Worcester.

'85.

C. S. Phelps is associate manager at Vine Hill and Ridge Farms, West Hartford, Conn.

I. N. Taylor is in Lynn, as is G. H. Putnam.

Goldthwait and Leary are at Harvard.

'86.

W. H. Atkins is with J. T. Lovett, Monmouth Nursery, Little Silver, N. J.

W. Ayres has been commandant and instructor in mathematics in Military Academy, Cleveland, O.

D. F. Carpenter has been teaching in Millington.

C. W. Clapp is farming in Montague.

R. F. Duncan is pursuing medical studies at Albany, N. Y.

W. A. Eaton is with Peter Henderson & Co., New York city.

C. F. W. Felt is on engineering corps, Atchison, Topeka and Santa Fe Railroad, Kansas.

R. B. Mackintosh is with his father in the wool business at Peabody.

G. S. Stone, after spending nine months on a dairy farm in Mountainville, N. Y., has returned to Otter River, and is carrying on his father's farm.

THE CYCLE.

SUPPLEMENT.

JUNE 22, 1887.

Containing an account of the Exercises of Commencement Week,
List of Prizes, Etc.

COMMENCEMENT EXERCISES.

The Freshmen celebrated their advance to the Sophomore class in the usual manner Friday night. The celebration consisted of a class supper, bonfire, firing cannon, ringing the College bell, and closing in the early hours by fireworks and various refreshments.

The exercises on Sunday consisted of the Baccalaureate sermon by Rev. C. S. Walker, Ph. D., who took as his text: "How much, then, is a man better than a sheep," found in Matt. xii.: 12. The four things which were especially emphasized in the discourse were: (1.) That the true worth of a man is shown by his character: (2.) The test of any occupation, of any institution, political or religious, is what sort of a man does it tend to produce; (3.) The test of civilization is the type of manhood developed; (4.) Perfect society must be the outgrowth of the perfect man.

Gentlemen of the Graduating Class:—

For four years have you lived in the midst of an environment prepared for you at great cost and care by the liberality of the Commonwealth of Massachusetts and the magnanimity of the government of the United States. These years have made their mark upon your character. Military discipline has taught you the value of attention and the necessity of obedience, and has reminded you of the obligations arising from your country's benefactions. The beauty of this valley and the grandeur of the surrounding mountains have challenged your attention. In sunshine and in storm, at sunset and at dawn, Nature has made her appeals to your nobler powers. She has stimulated you to manly sports, and by her coy ways has piqued your curiosity until in answer to your persistent questionings she has disclosed mysteries. Your intimate association with classmates and fellow students, gathered from all quarters of the globe, has afforded that contact of mind with mind which has led to a wholesome rivalry in the pursuit of knowledge. In the class-room, from day to day, you have met instructors who have given you their best endeavors to open up to you the exhaustless treasures of truth and life, that you might appropriate what your need demands. From time to time successful men have left the busy field of endeavor that they might tell you the story of their conflict and victory. In all your course of training you have been kept face to face with men and things; realities first and last and all the time have been held up for your contemplation. And in your endeavor to behold and comprehend and properly adjust your life to realities, you have found the greatest reality of all to be the God whose love and wisdom are manifest in all things, and creatures the work of His hand. At morning prayers, in the public worship of God in His sanctuary, in your meetings for social converse concerning spiritual things, you have found that religion and morality are essential elements of manhood, without which no enduring success can be secured. You came hither boys; you go hence boys no longer, but men; what sort of men time will soon reveal!

Your true worth will be shown by your character. College reputation will avail you little. Your acquirements, be they few or many, will soon be of little value. But the character you bear away with you will abide and prove your salvation and the glory of this institution; or, if it fail, lead to our shame and your ruin.

As you go hence you change your environment. Some of you go to another continent. Change of environment is always fraught with danger. The plant taken from the hothouse may strike its roots deeper and grow to perfection, or it may wilt and die. You go forth to choose what occupation shall be yours; in choosing, remember that the test of any occupation, profession, trade, or calling in life is its effect upon manhood. Let nothing bribe you to barter your manhood.

You go forth into life in the midst of a critical time. Our nation and the world are in a social ferment. This class will live and act in the midst of the 20th century. What changes must you see! What opportunities must be yours! In all contests and conflicts do you seize the vantage ground of manhood and hold it, as you may, against all attacks.

But to be a man, to be a living, growing man in the midst of the many vicissitudes of modern life and the fierce fires of lust and passion kindled by the greed of gain and the love of ambition is to achieve a miracle. You will need help. The example of the good and great of all ages will inspire you, but there is no help like the help that results to the struggling soul from a confiding faith and a loving trust in the Lord Jesus Christ, the one per-

fect man, the same yesterday, to-day and forever, who is always with us, by his spirit, to lift us up and support us ever on the highest plane of true manhood.

PRESIDENT GOODELL'S FAREWELL ADDRESS TO THE SENIORS, MONDAY MORNING, JUNE 20.

Young Gentlemen of the Senior Class:—

As the hour draws nigh when we must part, I feel that I cannot let you go without in some more personal manner wishing you God's speed, and that good fortune and success that waits on honest endeavor. Four times since first we met the year has renewed its beauty, and now the spring stands crowned in all its lovliness.

Wherever the eye may rest, on valley, wood, or mountain, everywhere is life—life in its prime of beauty. This week you enter upon your life work, whose harvest will be what you make it. Can I do more wisely than to recall to mind the golden words the Hindoo uttered more than two thousand years ago: "Man follows the bent of his will; subdues, or is led by his passion; bows to the law of his conscience, or wilfully lives in rebellion. He says to himself I am free! He says true! He is free to grow noble; he is free, too, to work his undoing. But though he act as he will, he is but a tool in the great hand of destiny, used to perfect its fabric of life. Out of evil comes good, but not for the doer of evil; he has earned for himself sorrow that he did freely; he has worked for the good that he did blindly. Out of evil comes good, from sorrow shall follow a blessing." Yours will be a stirring age. The great questions now agitating humanity will confront you at every step, and you will have to decide for yourself their right or wrong. Consciously, or unconsciously, you will play your little part in the great drama of life, and work for the general harmony of the whole. Stand fast for the right; strike at the root of evil.

Be honest! Be true, and eschew the hollow shams and pretences by which you will be surrounded.

"Fight well, and thou shall see after these wars
Thy head wear sunbeams and thy head touch stars."

Use your talents on the side of morality and justice. Never prostitute them to a cause you disbelieve. Remember that they are a special gift to God, and are not objects to barter and trade to be knocked down to the highest bidder. If you but have his seal upon them, you will wear the livery of the Deity. Wherever you may settle, remember that the community has a right to expect infinitely more of you than of the clever young mechanic, who may chance to live next door. It has a right to demand that you shall be a cultured gentleman. Genius and learning must go hand in hand with character. The man who can stand forth with uplifted brow in the conscious sense of a pure body and an unsoiled mind is a power which none can withstand. For the angels of light are on his side, and the powers of darkness cannot harm him. And now, as we bid you farewell, we wish you success in every good and honorable undertaking. We pray that every blessing may attend you, and that the riches of that mercy we ask for ourself may rest upon you. Perplexities and trials will come. The world will seem dark and the way dreary. There will be times when you will not know which way to turn. But rest assured that the darkness comes before the day, and if you but have faith the light will surely break. Be yours the prayer of the poor Breton fisherman as he puts to sea in his wretched skiff: "Oh, God, thy ocean is so large and my boat so small."

THE Grinnell Prize Examination in Agriculture occurred Monday forenoon and afternoon. Each Senior delivered a short essay which had been previously prepared. After each one had read his essay he was questioned on the subject. The subjects were taken up by the different men as follows:—

Soils—A. L. De Almeida.
Drainage—W. N. Tolman.
Mixed Husbandry—C. H. Watson.
Farm Economy—F. B. Carpenter.
Germination of Seeds—F. A. Davis.
Forestry—Wm. H. Caldwell.
Rotation of Crops—W. E. Chase.
Manures—H. N. W. Rideout.
Tobacco Raising—F. H. Fowler.
Potatoes—C. W. Fisherdick.
Market Gardening—C. L. Marshall.
Ensilage—C. S. Howe.
Breeds of Sheep—F. S. Torelly.
Beef Production—J. M. Marsh.
Atavism—T. F. B. Meehan.
In-Breeding—J. C. Osterhout.
Breeding Dairy Stock—E. R. Flint.
Milk Production—E. F. Richardson.
Butter Making—E. W. Barrett.

The Kendall Prize Speaking took place before an unusually large audience Monday evening, at 8 P. M. The speakers and their subjectse were :—

Freshmen.—N. H. Whitcomb—Battle of Bloody Brook; L. C. Stillings—The Roman Sentinel; David Barry—Welcome to Justin McCarthy; G. A. Goddard—The Last Hymn.

Sophomores.—A. M. Nourse—Waterloo; C. E. Bliss—Skating; F. W. Davis—How Jane Conquest Rang the Bell; H. E. Woodbury—The March of Attila.

The Judges were: Prof. Frink and Dr. T. P. Field of Amherst College; also, Mr. Hiram Kendall of Providence, R. I.

The D. G. K. Fraternity held their 19th Annual Reunion Monday evening, June 20. After Prize Speaking a secret session was held in the Chapter Hall, which was well attended by the older members, after which about forty-five members sat down to the annual banquet at Hill's dining-room. Some time was spent in discussing the *menu*. The toasts were exceedingly interesting, and all present will remember the event with pleasure. Some of the older members of the fraternity spoke very favorably of the work done by the different Presidents of the M. A. C., and all hope the boom of progress will continue.

The Annual Convention of the Q. T. V. Fraternity was held at M. A. C. Saturday, June 18, at 10 o'clock A. M. The Chapters were represented by the following delegates: Orono—Williams, '87, and Hatch, '88; Dartmouth—Waldron, '87, and Gerrish, '88; Keystone—White, '87; Worcester Tech.—Tucker, '87, and Treadway, '88; Amherst—Flint, '87, Shimer, '88, North, '89. After the transaction of a vast amount of business and the election of officers for the ensuing year they were given a banquet by the Amherst Chapter.

The Phi Sigma Kappa Society held a reunion in the Chapter rooms. Mrs. Kellogg catered. A number of the older gradnates joined in the festivities, which were very enjoyable to all.

The College Shakespearian Club held a very enjoyable reunion in their room. Supper was served, and some very interesting toasts were given.

On Tuesday the Commemorative Exercises of the 25th Anniversary of the Congressional Endowment of Agricultural Colleges were held in the new Chapel. The commemorative address was delivered by Charles Kendall Adams, LL. D., Pres. of Cornell University. He spoke at great length on the founding of Agricultural Colleges in the different states and the good they do. A history of the College was given by Hon. Charles G. Davis, of Plymouth, Mass., who has been connected with the institution from the beginning, and no one is better able to give its history than he. It is to be regretted that Com. N. J. Colman could not have been with us to participate in the Anniversary. Hon. Daniel Needham, of Groton, Mass., who was to deliver the address of Welcome was absent, as was also Hon. Justin S. Morrill, U. S. Senator for Vermont. After the exercises all went to the Drill Hall where dinner was served by Caterer Hill.

The Commencement drills took place at 4.30 o'clock Monday and 5 o'clock Tuesday afternoon. On Monday the Cadets fell in for short drills in artillery, mortar and sabre practice; the drills were executed in a very fine manner. The artillery drill was very interesting this year, as several new movements were executed. Tuesday's drill consisted of a full dress battalion, with facings, in which the Cadets did themselves great credit. The drum corps this year was a great improvement on last year, and we hope it may be continued.

The President's reception to the Graduating Class was held last evening in the new Chapel. After a very enjoyable evening the company broke up at about 10 P. M.

The Graduating Exercises commenced about 10 o'clock this morning. The Faculty appointed seven speakers: Thomas F. B. Meehan—Labor and Combination of Capital; Fred H. Fowler—Coöperative Agriculture; James M. Marsh—The Foes of Good Government; Edward R. Flint—Agricultural Experiment Stations; Cyrus W. Fisherdick—Land Laws of the United States; Charles L. Marshall—Dangers of Foreign Emigration; Edward W. Barrett—Classics and Science.

The diplomas of the College were conferred, as has been the custom, by the Governor, and the Boston University and military diplomas by President Goodell.

The prizes were awarded as follows: *Kendall Prizes*—First, Arthur M. Nourse, '89; Levi C. Stillings, '90. Second—Henry E. Woodbury, '89; N. H. Whitcomb, '90. *Grinnell Agricultural Prizes*—First, William H. Caldwell, $50.00; second, Chas. L. Marshall, $25.00. *Hill's Botanic Prizes*—W. H. Caldwell, $15.00; C. L. Marshall, $10.00. *J. Clark Anatomy and Physiology Prize*—David Barry, $25.00.

THE CYCLE.

VOL. X. MONDAY, JUNE 18, 1888. NO. 1.

PUBLISHED BY THE ALEPH CHAPTER OF THE Δ. Θ. Χ. FRATERNITY, MASS. AGRICULTURAL COLLEGE.

ORDER OF EXERCISES.

For the Eighteenth Graduating Anniversay, June 17, 18, and 19, 1888.

SUNDAY, June 17.—Baccalaureate Sermon, by Rev. C. S. Walker, Ph. D., Professor of Mental Science, at 10-45 A. M.

Address before the Young Men's Christian Association, by Rev. Calvin Stebbins, of the Church of the Unity, Worcester.

MONDAY, June 18.—Grinnell Prize Examination of Senior Class, in Agricultural Hall, at 10 A. M. and 2 P. M.

Standing Gun Drill, Mortar Practice and Bayonet Exercise, at 4-30 P. M.

Kendall Prize Speaking of Freshmen and Sophomore Class, at 8 P. M.

TUESDAY, June 19.—Alumni Meeting, Old Chapel, at 8-30 A. M.

Graduating Exercises at 10 A. M., followed by the Alumni Dinner.

Field Meeting of the State Grange.

As we present this, the tenth volume of the CYCLE to our friends, we hope that it may prove to be both interesting and instructive, and we would ask each one to pardon whatever he may find amiss in it, knowing that we are liable to make mistakes, which, though they may be small, still will sometimes do much harm. We feel that in a publication like this, a large share of the space should be devoted to matters having some relation to the work of the College, and to the every-day life of the students. With this end in view, we have striven to collect only such things as would aid us in accomplishing our desired object, and in the following pages will be found the result of our labors, from which each one can judge for himself whether we have fallen short of the mark. We would call attention to the article on *Cane Rushing*, as we believe that the sentiment it expresses is that felt by a majority of the students, and we trust the time is not far distant when the barbarous custom will be abolished. In the *Locals* we have endeavored to give items which we thought would interest our readers, and in the *Personals* may be found such information as we have secured concerning certain of the alumni. In the article on the *Hatch Experiment Station*, we hope may be found, agreeably stated, the work which is being carried on under the bill recently enacted. And now, kind reader, as you criticize the following pages, may it be with a measure of charity for us, and with the remembrance of younger days, when you viewed life from a standpoint which increasing years have done much to change.

DURING the past few years there has been considerable trouble about the students drilling, but more especially among the foreigners. There is no reason why the trustees could not exempt all foreigners from military exercises as is done at other colleges. Foreigners enter the College for the agricultural training, military they care very little for, and in many cases are not strong enough to stand the strain of the drill. It sounds very nice to say the rifle is light, but to carry *seven pounds* for an hour, as a rifle has to be carried, is not an easy task for men of delicate constitution. It is an undisputed fact that people of the warmer climates cannot endure as much as those of our temperate regions. Then why force foreigners to drill with our farmers' sons that attend here? During the past year several foreigners have gone elsewhere simply because they could not get excused from the military exercises.

It seems as if an improvement could be made in our chapel exercises Sunday mornings. If the students were assigned seats in the center of the house and near the front it would be much easier for our pastor, and he in his turn could make it more interesting for the students. We know there is very little interest taken in the chapel exercises unless the fair sex are present, but out of respect to the one preaching, and to the members of the Faculty with their families that do attend our services, the students should at least keep awake. As it is now, a few occupy the front rows of seats and the remainder of the students get as far back as possible, while some even occupy seats on the side. Any one preaching would have to look some time to find many that take an interest in the sermon. Such indifference is very disheartening to a preacher. Let us hope for a reform in this matter the coming fall.

The work of the Massachusetts State Experiment Station deserves particular attention, and a great deal of praise is due the director and his assistants for the manner in which they have carried it on the past year. The valuable work done in the laboratory in the analysis of fertilizers, forage plants, grain and food materials, etc., is such as will be useful to the farmers of the State in the management of their farms. In the field experiments it has been the aim to determine the action of various fertilizing materials upon different field and garden crops, also to prove the value of these crops to the farmer as food materials. in which some very interesting results have been reached. The feeding and milk experiments deserve careful study, also the feeding with swine are of much value to the farmer. The results of the above mentioned experiments may be found in a tabulated form in the Annual Report of the Station for the present year.

We would call the attention of our readers to the "Twenty-fifth Annual Report of the Massachusetts Agricultural College," as containing much interesting and valuable matter in relation to the work of the institution and the needs of the various departments. Within its pages may be found the reports of the agricultural, chemical and military departments, and the latter article we would recommend as giving an insight into the manner in which the military education of the students is accomplished. Following these comes the general catalogue of Faculty and students, together with numerous points which would be of interest to one who is thinking of availing himself of the advantages offered by the College. In addition to these are appended a paper by Prof. Alvord, on the "Differences in Dairy Products," and another by Prof. Fernald, entitled "The Orthoptera of New England," which has been carefully prepared after a thorough study of the subject, and is designed for the use of the students and as an aid to the farmers of the State.

The improvements in the farm have been continued from last year, the pasture lot west of the College has been cleared of stumps and planted again, also a new strip of land has been put under cultivation this year. It is the intention that all of the land be put under cultivation as fast as the work can be pushed, but little can be done without men. We now have six horses on the farm, two of which were a present from Mr. Lawson Valentine, of Houghton Farm, N. Y. Much good work could be accomplished with a few extra men to help reclaim the land which after being cultivated will be the most valuable land of the farm. The farm department has been favored this year by the Legislature, the $10,500 appropriation for it is to be used in painting the farm house and barns, shingling, building fences, which we hope will prevent the sheep from making a pasture of all the College ground, as was done the past season. The horse stables and sheds are to be enlarged and renovated, more draining is to be done, and some new wagons are to be purchased. When this money is spent on the above improvements we shall be able to make an appearance that will be a credit and not a disgrace to the Commonwealth.

We feel that the students of M. A. C. can justly be proud of the manner in which the Reading Room Association has conducted its affairs during the past year, and we hope that the privileges it has of-

fered have been fully appreciated by every one interested in the literature and news of the day. The reading room has been improved by the introduction of lamps, which have long been needed and which make it a pleasanter and more inviting place of an evening. It could be further made attractive by the addition of pictures of the various athletic teams of the College, which have represented it in past years, and we hope that some arrangement can be made by which they will be placed upon its walls. They will serve not only to adorn, but also will be full of interest to future students, as showing the men who, whether on the field of victory or defeat, have striven to uphold the standard of old "Aggie." If one were to take a look into the reading room, he would find there represented the leading daily and weekly papers of the day, together with various ones devoted to agricultural and religious subjects, popular weeklies, the publications of our leading colleges, and the standard monthly magazines, all of which are accessible to every man in the institution. Let us hope that this work may be continued in future years, and that the reading room may ever be a favorite resort.

It seems to be the policy of our Trustees to be constantly making or allowing changes in the Faculty. Two years is the average time that the Professors in some of the departments, and the President, are destined to occupy their positions. And now as the time approaches for the appointment of a new President and Professor of Agriculture, it is with a great deal of interest that we look forward to the results of the meeting of the Trustees. Can they not make it enough of an object with our President to induce him to retain his position? With his great executive ability, and faculty of making himself popular, they will be obliged to look far and wide to find one who will as effectually fill the Chair. In the agricultural department it is earnestly hoped that a Professor will be chosen who can devote his attention to class room instruction, for, although we do not wish to censure the way in which this has been carried on during the past year, still we believe that to accomplish the most satisfactory work it is necessary to employ the time assigned, in such a manner that these results may be reached. The instruction given in this department during the present term has been such that we feel that it would be for the best interests of all concerned to retain our temporary Professor in his position. Plain and practical teaching, the result of years of experience, is what is desired by the average student, and it is only through those who have had this experience, that the knowledge may be obtained. Our College should grow now if it ever is going to, but it will not offer any great inducements to young men so long as there is this great uncertainty in regard to the Faculty. It is also hoped that some system may be introduced which will enable those who come here to study practical agriculture to participate in the practical work, without being obliged to do the hardest and heaviest which the farm affords.

What does your College fit young men for? How many of the students become farmers when they graduate? Such questions as these are quite frequently asked us. And perhaps the best way to answer them is to show in what pursuits the members of our alumni are engaged. If we will first take them as a whole and see what per cent. are actually engaged in agriculture, we will find there are about 31 per cent. This includes regular farmers, horticulturists, stock-raisers, etc. While the largest number belong to this class, those that are engaged in business pursuits are not far behind, having 28 per cent. Next in order come the chemists and civil engineers, there being 8 per cent. in each, while the remaining 25 per cent. are engaged in different occupations, some being physicians, lawyers, veterinarians, journalists, etc. At present many of our alumni are engaged as professors and assistants in other agricultural colleges and experiment stations. Five of the graduating class are already engaged as assistants in the different stations. By the Hatch act the demand for agricultural chemists and for men capable of acting as field superintendents has been increased. The false impression which prevails among those not acquainted with the College, that if a young man attends, he has decided to be a farmer, and is not fitted to follow any other pursuit, is gradually fading away. For although the whole course bears on agriculture, it is not confined to that subject alone,

but it gives a good, general, scientific education, which will fit a young man for any business he may choose to take. As the agricultural standing of the country is being raised, the necessity of having better educated men for farmers is manifested. And we feel that there is no better place for a young man to get a general agricultural education than at ths Massachusetts Agricultural College.

Why cannot *Aggie* have a ball nine? This is a question which at first would seem hard to answer satisfactorily. We have plenty of men who, with the requisite training, would make players, and they would be willing to take the necessary time to practice, if by so doing they could form a team which would hold its own against some of the *Seminary* nines. When the season opened we had great expectations of our nine, and in the first game they did very creditably, in fact outdoing themselves, as has since been shown. Since that first game everything has been against them, and consequently they have not made any great showing. One great trouble seems to be that the men do not play together, or in other words, support each other. A battery, no matter how good it may be, cannot win a game unless they are supported by the rest of the team, and nothing is more demoralizing to a pitcher than to see the fielders throw away what chances they may get. Another thing in which it would seem that much has been lost, is in the experimenting which has been done in the pitcher's box. There has been hardly a game in which two, and sometimes three men have not occupied that position. Would it not have been much better if the man who was best qualified for the place had been practiced for it, and allowed to keep it, unless prevented by some unavoidable circumstance from so doing. A thing which has thoroughly disgusted all who have witnessed any of the games, is the indifferent manner in which some of the players have fielded their positions, and the don't-care expression which they have assumed after they have made errors. Such conduct is enough to dishearten any player, however good he may be, and further, it offers no great incentive for others to accompany the team and "back them up." It is the man that tries hard that may be pardoned if he sometimes "gets left." Let us hope that in the future when teams are organized, each man will be given the position he should occupy, and that every one will remember the motto "United we stand, divided we fall."

In accordance with a custom prevalent in past years, the Committees of the Legislature on Agriculture, Education and Military gave the College a thorough overlooking on Friday, May 11. The party, numbering about forty, arrived in Amherst the previous night, and made their headquarters at the Amherst House. In the morning they came up to the College in several large teams, and were ushered into the Chapel, where they joined in the devotional exercises. These being over, the College buildings and grounds were thrown open to the inspection of the visitors by the President. In a short time the students formed on the Campus, and entertained the gentlemen with a dress parade, followed by a battalion drill. After manoeuvering for some time the battalion was halted, and an apportunity was given the members of the various committees to inspect the cadets and their equipments. They all expressed themselves highly satisfied with the creditable appearance that was made, their criticisms being on minor points which are too often overlooked. As soon as the drill was over, the cadets retired to their rooms, and a regular inspection of quarters was made, giving those who wished an opportunity to see the *luxury* with which the students are surrounded, and also serving perhaps to bring back to mind the scenes and incidents dear to them as being associated with their college life. The regular round of the buildings was now taken up, commencing with the barn. A thorough examination of the stock and equipments of the farm was made, and it is to be hoped that some benefit may be derived from it, for quite a sum of money could be wisely expended in the purchase of cattle to replace those now found in the stables, and in supplying new and improved machinery. The next building visited was the Stone Chapel, containing the Library which, thanks to our energetic librarian, is rapidly growing in size and efficiency. The buildings of the State Experiment Station, which, although situated on land leased from the College, is entirely independent of it, were next inspected, and it would seem strange if a favorable impression was not left on the mind of every one in the party.

Last, but not least, the grounds and buildings of the Botanical Department, displaying both taste and care in their management and construction, were viewed, and then the party bade farewell to the College grounds, going back to town, and leaving for Boston in the afternoon, however taking the opportunity to visit some of the buildings of Amherst College before so doing.

When it was rumored some months ago that we were to have a college gymnasium, many were incredulous and the majority of the others did not expect it until sometime in the dim, uncertain future. But now it is a foregone conclusion that next term we shall have a place where a student can find relaxation after hard study, and at the same time pass an enjoyable and advantageous hour. Since the first of June, workmen have been busy remodeling the interior of the Drill Hall, and a glance will show what a vast improvement has already been made. The whole of the Drill Hall proper is to be sheathed and then varnished. The apparatus, for the present, will consist of trapezes, parallel bars, horizontal bars, ladders, rings and chest weights. These are absolutely necessary and will be put in at once; other apparatus will be supplied as soon as convenient. The building will be heated by steam, the engine to be placed in the room adjacent to the armory. The Drill Hall has always been uncomfortable in winter on account of the cold, but, hereafter, a temperature of 50° can be maintained during our coldest weather. A base-ball cage will be located at the end nearer the barn, and thus an opportunity will be given for practice during the winter months. That we need all the practice that can be crowded into both the winter and spring terms is painfully apparent, and the work of this year's team only intensifies this fact. As there has been no appropriation by the State for a gymnasium, the funds must come from other sources, and it is expected that, of the sum required, one hundred dollars will be given by the students. That amount divided among the number in College will make each man's portion small, and, as we are to derive all the benefits, we should contribute at least that sum. Through Lieut. Sage's efforts this has been brought about, and this fact should not be forgotten by the students. He is much interested in our athletics, and if we do as much for ourselves as he has done for us we will be more competent to compete with our neighbors in athletic sports.

The great "blizzard" of March 12th and 13th, which caused such a lull in the business world throughout the Northern and Middle Atlantic states, completely shutting off all communications between cities either by rail or telegraph, will long be remembered by those who experienced it, as one of the most severe storms ever felt in New England. It commenced snowing gently on the evening of Sunday, the 11th, and Monday morning the ground was covered to quite a depth, and it was still coming down very rapidly. This continued during the entire day, and to make matters worse, a strong wind had been blowing the snow here and there, filling the air with the blinding particles, and piling them up in huge masses. At night the snow was so deep, and the storm was still raging so severely, that it was with great difficulty that any of the students could reach their boarding-places, and some were obliged to turn about after struggling a short distance. This state of things was kept up during the night, and in the morning a strange sight presented itself to the eyes of the fellows as they looked out of their windows. Snow was still falling, and huge drifts were everywhere to be seen, making it appear at the first glance as though M. A. C. was completely isolated from the outside world. As might naturally be supposed, no College exercises were held during the day,—although a few of the more adventurous spirits went to Chapel when the bell sounded,—and it was spent in opening communication between the various buildings, in which work the students heartily joined. During the night several of the fellows were awakened by the reflection of a bright light shining into their rooms. The cause of the light was apparently in the centre of the town, and several of the fellows started out with the intention of going to the fire,—for such they rightly supposed it to be,—but were able to go only a short distance, being obliged to give up on account of the severity of the storm. The next morning a dozen or more started out for the purpose of learning what they could in regard to the fire, and after a tiresome struggle, with the

snow up to their waists, by going in single file they managed to reach their destination. Here they found that one of the business blocks and a dwelling house had been entirely destroyed by the fire, and that another building had been badly gutted. The fire originated in some unknown way, and the ruins presented a very desolate sight indeed. After tramping around town for some time, the homeward march was taken up, and College was reached about dinner time. Regular exercises were resumed the next day, but all were not in their accustomed places, for quite a number have homes in the vicinity, and after reaching them they were obliged to stay until the highways were opened. Let us hope that another such storm will not be experienced for many years.

BOTANIZING EXCURSION.

Among the days to which the M. A. C. student can look back, and probably one which he will long remember, is that on which he and his classmates, as *Freshmen*, under the protection of the fatherly eye of the Professor of Botany, made an excursion to some favorite haunt for the purpose of collecting *rare* specimens with which to adorn their herbariums.

This trip is taken generally about the first of June, and the preliminary arrangements for it usually occupy the greater part of the preceding month, for it is really more of a task to prepare for such an expedition than might at first be supposed.

Perhaps the hardest point to decide satisfactorily to all parties is in regard to the day they will take for the trip, for every member of the class is anxious to "get off" on a day when college duties press the hardest, while the Faculty are equally anxious upon the other side of the question.

At last this matter is settled, and probably by this time the *redezvous* has been decided upon, and the means of transportation likewise.

Now that all things are ready, every Freshman is uncommonly restless and impatient, and sighs for the coming of the eventful day, and after what seems an age it does come. Awake with the first blush of dawn, each one springs up and scans the horizon to see what are the prospects for the day.

It is an ideal spring morning; the birds are singing in the trees, and a cloudless sky seems to give promise of as pleasant a day as one could wish for. All is now bustle and excitement, for an early start will be necessary in order to reach the "Devil's Garden,"—a place so called in the vicinity of Mt. Holyoke, which has been named by the class as the place of meeting,—at the appointed time.

Breakfast must be eaten and a hearty lunch put up, for the exercise of the day will be of the kind to give one an appetite.

Various methods of locomotion are now put into practice, some hire teams at the different stables in town, for the "Notch," which means to the proprietors of these establishments, to whom experience has been a good teacher, South Hadley and "Hamp." Others "paddle their own canoes" in the shape of bicycles, while still others make use of "shanks' mare," and taking a short cut through the field, have many thrilling escapes before reaching their destination, as, for example, falling into a brook, etc.

But these last are not alone in their trouble, for some of the others are having their share of the excitement. The "cyclists," for example, have taken numerous "headers," either occasioned by their own carelessness, or by that of some mongrel dog, which had the audacity to run in front of their machine. Perchance some of those provided with teams, who happened to know the road so well that they needed no directions, have turned their horse's head, as they supposed, toward the goal, but have found themselves brought to a stand-still, three or four miles from their destination.

But despite hindrances, all get together at last, and after "putting out" their horses, and hitching them to trees, they get together their collecting apparatus and start out in quest of staffs, which are to aid them in climbing the mountain, taking the precaution to leave one or two of their number to keep guard over the property left behind.

Each being provided with a *durable* walking stick, the real work of the day commences. Up the steep side of the mountain, over rocks and boulders they toil, stopping now and then to gather some plant which may attract their attention, or making a misstep, start suddenly for the bottom, but, fortunately, bring up against a neighboring rock.

At last the patient plodding brings them to the summit, where they throw themselves down to rest,

after having made the air ring to the awe-inspiring tones of their class yell.

Some little time is spent here, enjoying the fine views which can be obtained, and then the signal to descend is given. This is found to be more difficult than ascending, and it is only after a considerable search that a way down is found. As it is, many narrow escapes from falling are experienced, but fortune seems to favor the brave and reckless, and the bottom is reached without an accident.

Every few moments during this trip the cry, "I've found a *new* specimen," has been heard, but on examination these treasures fade away into some of our most common plants, as *Houstonia caerulea* in disguise.

On arriving at the rendezvous the call for dinner is sounded, and by the way *la viande* disappears, one would conclude that exercise of this kind is a great stimulant for the appetite.

After the masticating process is completed, and the *sweetened water* bottles have been slyly emptied, the class is treated by the Professor, who now takes the opportunity to give the fellows some very good *advice* as to the proper way to conduct themselves during the rest of the day, and in fact, all other days which they shall spend in College, after which the march to the "Garden of Eden" is taken up. Probably not more than half of the class will be found among the number who start out, the rest staying behind to watch the things, which they only do so long as the party is in sight. After it has disappeared some of them suddenly come to the conclusion that they have collected all the specimens they care to, for one day, and picking up their things start for home(?).

Nothing of any importance occurs to mar the peace of the after dinner trip, although there was some excitement when one of the party ran across a rattlesnake, which upon further investigation proved to be really a snake, but minus the rattles. As the members of this party come straggling in, two or three at a time, they begin to gather their scattered belongings, preparatory to taking their departure. When all is ready a farewell cheer is given, and the subject of botany is dismissed from every mind for the rest of the day, which is usually spent in getting back to Amherst, for, as most of our readers may know, in this case, as in many others, "the longest way around is the shortest way home."

One route which seems to be a favorite with many of the students, is to take the road leading down the opposite side of the mountain, through the pleasant village of South Hadley, past the seminary buildings, where those who are lucky enough to have "cousins" there may stop, and home again through Northampton and Hadley. Another is to "Hamp." direct, where other "cousins" may be found and many *curiosities* are to be seen.

But we will leave the different members of our party, thus widely scattered, to make their way back to old M. A. C. as best they can, and all will probably be so tired from the effects of their day's travels that they will not be in condition to prepare their lessons for the next day, and consequently it will not be strange if "dead flunks" are set down to the credit of men who are usually well prepared. Despite these bad results it is the verdict of each and every member of the party that he had a capital time, and we will leave the matter to be looked at in that light by our readers.

JUSTICE FOR JAPAN.

Thirty-four years ago, Japan opened its long closed gates to the outside world. Four years later, the first commercial treaty was drawn; this was between Japan and the United States. From a careless insertion of a word or two by the United States minister, this treaty became the fountain whence issued the bitter waters that have flooded the peaceful empire of Japan.

By this and like treaties with other nations, Japan lost two of the essential attributes of sovereignty. She was compelled to give up the inherent rights of trying aggressors of foreign blood in her own courts, and was prevented from levying necessary duties on imports. Moreover by cunning interpetations and cruel extortions, the treaties have been continually enlarged in favor of foreigners, so that these treaties are now full of rank injustice.

Lord Elgin led in subverting the treaty with England, by reducing the duties on cotton and woolen goods from 20 per cent. to a nominal rate of 5 per cent. Other European nations soon followed the example of England, and finally in 1864, an

imposing squadron of the leagued nations forced the then helpless empire to receive all kinds of manufactures at the same nominal duty.

Thus Japan has been persistently robbed of her proper national resources. So long as she was excluded from the outside world a comparatively small revenue sufficed for the maintenance of the Government. But, since the intercourse with foreign nations began, the national expense, inseparable from commerce and diplomatic relations has largely increased, while the treaties closed most of the channels of public revenue. As the result four-fifths of the burdens of taxation rests directly upon the peasant farmers already suffering great loss of income because of the cheap importation of foreign products. This has also ruined a large number of comfortable homes, and brought many manufacturers to wretched poverty. Japan, as a nation, is trembling on the verge of bankruptcy.

England, in a most provoking and unreasonable manner, is forcing Japan to import her goods at the reduced rate, while she collects a much higher duty from Japanese articles. Indeed, the duty collected by the English on a single class of goods is often more than the amount of the entire customs collected by the Japanese empire.

Taking advantage of an internal struggle of Japan, the foreign powers, in 1863, dishonestly put off the revision of the duties as provided by the treaties. Since that time, England and other nations have most unreasonably claimed that the perpetual validity of the treaties must be recognized. Thus the so-called civilized and christian nations were not ashamed to disregard their most solemn moral obligations.

The Government, though disappointed and disheartened, set to work to reform the country, hoping to be able to secure the general revision agreed upon in 1872. In that year, to their astonishment, the imposing embassy sent to Europe and America were obliged to return without any assurance of justice.

But, injustice connected with the tariff is not the only wrong. England has assumed that the ports opened to her are English ports, as if they were obtained by cession or conquest, and has established consular courts. Other nations have done the same, hence, there are eighteen different penalties for the same offence. Besides, many of the consuls acting as judges have no qualification for their duties, and the consular courts are often nothing but asylums for criminals. In such a state of things, how is justice possible?

For very insufficient reasons, as if to prove her superiority, England bombarded the city of Kagoshima, and after burning it and killing the inhabitants, extorted a fine of half a million of dollars. Another flourishing city of the Imperial dominion suffered like wrongs from a combined force of four nations.

I can but allude to other abuses; one of the English ministers, sheltered by the English navy, was both rapacious and cruel; he refused to pay the tariff on coal; he countenanced smuggling; and he maltreated Japanese officers, because they failed in a mere point of etiquette. Among other inhuman deeds of this British minister, there is one which can never be forgiven, and which will long remain inscribed on the memory of the Japanese people. In 1877, for the purpose of satisfying English greed, the minister attempted to force the sale of opium in Japan, and was thus willing to expose the weak and innocent people to the ravages of the deadly scourge. Thanks be to God who defeated the selfishness of man, and saved the nation from lasting physical and moral degradation.

Other European nations have not been slow to follow the example of England. Before the great out-break of Asiatic cholera nine years ago, the Japanese government established a thorough quarantine, and besought the foreign powers to regard the regulations. But all except the United States unanimously refused the proposition; and when a German vessel arrived from the centre of an infected region, the German minister ordered a warship to assist the captain to land the goods and passengers. As the direct result of this atrocity, the country became a death-bed of hundreds of thousands of innocent people,—a greater slaughter than was ever recorded in the bloodiest war of Japan.

Believing that justice is the informing spirit of international law, and that the golden rule is an essential element of Christian civilization; Japan opened her ports to foreign nations. But justice

and equity; where are they? Not in the dealings of Christian nations with Japan. Thus does foreign diplomacy deny to Japan her God-given rights of local self government, and fling the united powers of eighteen mighty nations in the way of Japan's heroic attempt to attain for herself the privileges of Christian civilization.

As to Japan's future prospects, one thing is very plain; she must either free herself by breaking this heinous chain of injustice, or die in the cruel hands of the oppressors.

How shall justice be secured to Japan? By diplomacy? Her ambassadors have been spurned from European courts. Their most reasonable requests have been disregarded. Shall Japan trust the agitation and wider knowledge of her wrongs? Every intelligent man on both continents has the means of knowing what she suffers. But one alternative remains. She must contend for her rights upon the field of battle, trusting in the justice of her cause and in the aid of that Divine being who cannot be unmindful of the suffering of ä whole people, änd whatever the attitude of other nations, Japan must find an ally in the people of the United States.

THE FOUR STEPS OF COLLEGE.

The Freshman is as green as grass,
When first he gets to College,
And, though at first he's full of brass
It all comes out with knowledge.

He comes, and knows more than the Profs
And thinks he's naught to fear,
But when the Sophs get hold of him,
His mind becomes more clear

When he's been "sat on" every day
For a few weeks, or so,
He gets tamed down and changes much
Towards the way that he should go.

By the next June he's a different man,
He's lost most all green tinge,
And now he's planning means to make
The next year's Freshmen cringe.

The Sophomore is oft called bold,
For he's always planning things,
To make the wondering Freshmen know
The *joys* the first year brings.

The rope pull comes; it may be lost
But he knows just where to call,
So, it is not many days before
'Tis gone from the Freshman's wall.

Some day, with half a dozen mates,
When not a Freshman's near,
They mount the stair, go in a room,
And then, the work is clear.

That Freshman's bed will now fall down,
His rope is soon thrown out,
And, by the time the Freshman's back
His room is "stacked," no doubt.

Thus goes the year, but towards the last
He seems to have more brains,
And now that his wild oats are sown
His ways begin to change.

As Junior, all his tale's soon told,
He's lazy as a clown,
And this year, if at all, he's apt,
To make his "Prexy" frown.

He likes to eut, he often flunks,
And if a Prof. should "kick,"
He puts right on his mournful face
And says, that he felt sick.

And thus the last stage has been reached,
He's a "stuck-up" Senior now,
He struts about with cane in hand,
And a plug-hat on his brow.

As Senior private he euts drill,
Which does not always suit,
So a certificate he trys to get
With which to fix the Lieut.

His end has come and soon he's gone
In the wide, wide world to be,
For he is an Alumnus now
Of the good, old M. A. C.

THE COLLEGE AND THE GRANGE.

The Massachusetts Agricultural College extends a cordial welcome to the Massachusetts State Grange. Both have the same great end in view. "We shall advance," says the Grange in its published declaration of purposes, "the course of education among ourselves and for our children, by all just means within our power. We especially advocate for our agricultural and industrial colleges, that practical agriculture, domestic science, and all

the arts which adorn the home be taught in their courses of study." By the statute which established the College it provided that "the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, * * * in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life."

The Massachusetts State Grange consists of some six thousand persons, male and female, young and old, from the agricultural classes of the Commonwealth, organized into some eighty or more local granges, a number of district granges, scattered among the different towns, and one representative body composed of delegates from the local organizations, which meets annually for the promotion of the general interests of the body. These six thousand form but a small portion of the 77,661 persons of Massachusetts engaged in agriculture. The U. S. army numbers only 27,489, officers and all; what is this little body of men compared with 60,000,000? It is an organized body. Its organization gives it power that is not to be despised. In a case of emergency we have seen this little army of picked men do valiant service and as a nucleus gather to its standards millions of brave soldiers ready to die for their country and the flag. So the 6,000 patrons of husbandry in the Grange are the organized body which the farmers of Massachusetts have put on guard. In all earnest efforts to promote the interests of agriculture and the agriculturist they have behind them the power of the whole body of the farmers of the State and of the nation.

As a means of promoting the interests of agriculture and of education among the people, the influence of the Grange has already made itself felt in the formation and direction of public opinion. When some years ago the legislature, forgetful of the obligations of the Commonwealth, was about to give up its care of the College and let it shift for itself, or become an appendage to some other institution, the Grange, through its secretaries, sounded the alarm and stimulated the farmers to come to the rescue. This was the turning point in the history of the College, and from that day to this the legislature has provided liberally for its needs and the institution has prospered.

But not content with past endeavors the Grange continues to interest itself in the College. It appoints annually a Committee on the Agricultural College, whose duty it is to inform itself concerning the work and the needs of the institution and to report to the annual meeting. In the last report the committee state that "to-day the Agricultural College is the pride of her citizens," and recommends that the State Grange hold a grand field day meeting on the grounds of the College during Commencement week.

In accordance with this recommendation of the committee, which was at once adopted by the State Grange, arrangements have been made for carrying it into effect. The College therefore hopes to extend its hospitality to a large number of patrons, who shall assemble on Commencement day, and to show what is being done to further the interests of agriculture and educate the coming farmer.

The College with its broad fields, its gardens, its orchards, its vineyards, its conservatories, its museums and library, its barns and stables filled with cattle and horses, its laboratories, its experiment stations, its bits of forest, affords many objects of contemplation to the thoughtful, while the addresses of the graduating class in the chapel and of the alumni at the dinner, will afford some idea of the estimation that is put upon agriculture and the power that comes from a liberal course of education.

It is the wish of the College to come into intimate connection with the farmers of the State, that advantage may come to both parties. It is especially desirable that patrons of husbandry should see with their own eyes and hear with their own ears the things that the College has undertaken, so that the 77,000 agriculturists of the State may profit to the fullest extent by the provisions here made.

The Grange may cooperate in two ways with the College. Patrons of husbandry should make themselves familiar with the results of the two experiment stations now in operation on the farm. They may examine into the methods and aims of these institutions as shown by what is actually being done. They should leave their address that such may receive the bulletins which will give the results of

investigations. They should feel free at any time to correspond with the directors of the stations, presenting queries upon any topic of practical interest in any of the various departments of agriculture. Patrons of husbandry should inform themselves of the many facilities the College affords for the acquisition of a thorough practical education, and then publish far and wide among the 36,000 farmers and the 35,000 farm laborers of the Commonwealth the fact that whosoever will may enjoy the rare opportunities. Instead of a little less than one hundred students there should be connected with the College two, three, five, or ten times as many. The Grange can advance their great aim of promoting education in no better way than exerting all the power of its influence to persuade the farmers of Massachusetts to send their sons to the College which has now been so well equipped by the United States and the Commonwealth. Fathers in other States, fathers in the West Indies, in South America, and in Japan send their sons from a distance, that they may, at a great expense, secure the education that the Massachusetts Agricultural College gives its students, shall the farmers of the Commonwealth deny their boys the education that the State so freely offers?

CHARACTERISTICS OF THE FRESHMAN.

When a Freshman arrives at the College in the Fall, the first thing he does is to get his room fixed up so that it is half-way inhabitable. This work keeps him busy for a few days, and aids in using up some of his spare time. After he is settled down and has more leisure time, he begins to think of home, and were it not for the numerous calls he receives from the upper-classmen—who, by the way, make a great many calls at the beginning of the term for the purpose of talking society—he might become quite homesick.

There is always a good deal of talk about having a cane-rush, and there it ends usually, although some half-way attempts are made by both classes. After the excitement over the cane-rush has died away, the two classes begin practicing for the "tug-of-war," which is usually won by the Freshmen.

It is rather interesting to notice the different kinds of fellows we find in a class. We will first take the large, solid fellow, who seems to take a liking to sports. He is at once sought for by the foot-ball men, and immediately goes into practice for the College team, and should he prove to be a good player, he will probably get on the team, and in case he does, of course he must practice continually in order that he may keep there. If he does well he will play in what few games there are played. At the end of the season the team will have their pictures taken, and a picture will be all that he has to show for his season's work, save perhaps a broken nose or a scarred cheek.

When the Fall term closes, he makes up his mind that in the winter he must do more studying, but when the time comes he doesn't do a bit more than he did in the Fall term. For he must practice base-ball indoors in order that he may be able to secure for himself a position on the base-ball team; and if this is where he is particularly in his element, he works hard, and when the warm spring weather comes he may be found on the Campus with a bat or a ball in his hands from morning until night. His talk is all about ball, at the table or wherever he may happen to be. When he is not playing ball he is trying to distinguish himself at tennis. Thus he goes on, and when examinations come in June, he knows more about the league players, etc. than he does about the studies he has taken up, although he manages to "pass," and appears to be satisfied even if he don't know much more than he did when he commenced. Thus he continues through his course, always managing to keep along with his class, and at the end of the four years he will get his diploma and be a graduate of the College.

Do not take it for granted that all who attend the College are like the one just described, for in contra-distinction to this class there is the "bookworm" class. This class includes those fellows who think they must study all of the time in order to gain the most knowledge. These fellows may be found studying most of the time, scarcely allowing themselves any exercise or holidays. For those who are strong enough this may be all right, but for those of weaker constitutions, it would be a very unwise course to pursue. Such fellows are, however, very scarce in this College.

There is another set of fellows who have been in society to some extent, and wish to continue in it after coming here. These men we will call the

"ladies' men." If you see one of them starting off in the early evening, you may be sure that he "has a letter to take down to the post-office," or that he is "just going to take a short walk up North Amherst way"; if he has a team he may be going to visit his "cousins" in Northampton, or he may be going to "spend a pleasant evening" with "friends" in the quaint village of North Hadley. All this takes time, and usually it is taken at the expense of their studies.

We have thus far cited extreme cases, and there are some who would not strictly come under any of these heads. They are those whom we might call the "happy mediums." They are the ideal students; while they take quite an active interest in sport they do not entirely neglect their studies for them, and whenever an invitation presents itself to any one of them to join in some social good time, he does not decline. Such fellows are the ones who help to make college life pleasant and profitable to all, and the more of this kind of fellows that will come, the more flourishing will be the College.

ADVANTAGES OF FARMING.

It is impossible to consider more than a small number of the advantages arising from farming.

Farming must be considered, without any question, the most healthful pursuit that one can engage in, as he must necessarily spend the greater part of his life in the open air. There is no other class of men physically equal to the farmers. We can nowhere else see such stalwart, broad-shouldered men as those we see engaged in tilling the soil. There are many of them who can truthfully say that they have never known a sick day in their life.

The greater number of intelligent people labor under the false idea that a person lowers himself greatly by becoming a farmer. They seem to consider farming an ignoble pursuit, forgetting that it was man's first occupation and that all classes of people are directly dependent on the products of agriculture for their existence.

Imagine the effect of an entire failure of the agricultural products of the earth for even the shortest time. It would mean wide spread desolation and death, ending only in the complete extermination of all living beings.

When such men as Washington, Lincoln and Webster were proud of having been farmers, no one of the present day need be ashamed to follow the same pursuit.

The declaration of Washington that, "Agriculture is the most useful, most noble and most honest employment of man," has lost none of its force during the last century.

It must, however, be admitted that the life of the average American farmer is not one to be chosen above all other pursuits. But we must not look at it in that light. We all wish to excel in whatever we undertake, although the greater part of us will perhaps succeed only partially at the most. Therefore, if we choose to be farmers it is of course understood that we at least intend to be something more than average farmers.

A reason often advanced to a young man to prejudice him against farming is, that as a farmer must generally live where there will be very little of the so-called society, he will have no stimulus to keep up intellectual work, and that his association with animals which have no minds will tend to create the same condition in himself. Now this theory may have been partially true in the past, but it is not so to-day. A successful farmer to-day must be a very wide-awake man. He must do something besides the mere routine work of the farm. He must study up his specialty and keep himself informed in regard to the new ideas that constantly arise in relation to methods of agriculture. Of course he must have his agricultural papers, and he should also have a good selection of other publications in order that he may keep up with the rest of the world and not become narrow-minded.

There is no reason why the farmer need be inferior mentally to any other class of men on earth. They are surely making great progress mentally as well as in the advancement of scientific farming. Still, some persons will be so bigoted as to say that the only question a farmer is capable of asking or replying to is, "*How's crops?*"

The science of agriculture is not such a simple thing as many suppose. The successful farmer must grapple with the forces of nature and bring them into subjection; and this is no slight undertaking.

It seems as if life would be more pleasant when employed in the varied duties of farming than it

would if employed in a counting room day after day engaged in adding up columns of figures or in other work of that confining character.

Many say they would not be farmers because they would have to keep such long hours. It is true that some farms are run on the principle of working all day and half the night, but they are by no means the most successful ones. Many of the most progressive farmers of to-day are running on the ten hour system with great success. They claim they can get as much work from their men in ten hours as they could before in fourteen or sixteen. Of course there will be busy seasons in the year when longer hours must be kept, but that holds true of any business. Careful estimates will show that the farmer works a less number of hours in the year than the average mechanic or business man. Twelve hours of farm work in the open air will be much less irksome than ten hours in a store or factory.

A farmer's life is, above all, independent, more so than that of any other man. The majority of men, if they choose a business career, will be in the position of employes, rather than of employers, and, as such, must necessarily be in a dependent condition. As they know not but it may be the pleasure of their employer to discharge them any day they must always be cringing or fawning, and, in fact, must be in very much the state of slaves. Now a farmer can generally get his living off his land, if nothing more, and so he may be nearly independent of every one.

Now, finally, comes the question so often asked, "Does farming pay?" We can say without hesitation—yes, as well if not better than any other legitimate pursuit. Although farmers, as a rule, may not be particularly wealthy, still one will find as many farmers who are, as is said, comfortably well off, as may be found in any other pursuit.

Thus we have, as a few of the advantages of farming, the reasonable certainty of health, a pleasant and useful life, independence and perhaps some degree of wealth.

CANE-RUSHING.

The practice of cane-rushing has been a common and almost time-honored custom in all our institutions of learning, from preparatory schools up to the highest and most advanced colleges in the country. This institution, for so it may properly be called, has, however, of late fallen into disrepute, especially among the larger colleges and universities. At Yale University the Faculty have gone so far as to offer a holiday to the Freshmen if they will desist from rushing.

A rush consists chiefly in one class carrying forth the cane, going in a body to protect and retain it; the other class then rushes upon them, for the purpose of obtaining possession of the cane if possible, and both classes then indulge in a general mêlée.

There is one peculiar feature about a cane-rush that renders it exceedingly unsatisfactory to each party concerned, that is, both sides claim the victory, and the upshot of this is that several rushes are usually indulged in, and all results finally in deciding nothing, but succeeds quite effectually in arousing feelings of enmity and ill will between members of the two classes.

It is claimed that one of the principal objects of the rush is to determine whether the Freshman or Sophomore class is the stronger. But is not this question more satisfactorily settled by the rope-pull or tug-of-war, and class games of base-ball and foot-ball?

And what after all does the rush amount to? If the end to be attained is to see how effectually one man can strip and tear the clothing from another man, and lame and bruise himself and others for days to come, it certainly succeeds admirably, but if there is any other object in view, the rush is a complete failure: for it certainly decides nothing as to the relative strength of the two classes, and as to the matter of carrying canes, it makes no difference which class claims the victory, the other carries her canes whenever she so desires.

As previously stated, the rush is little else than a rough and tumble fight, which oftentimes stops but little short of the brutal. In the rush at Amherst College this year, two Freshmen were knocked insensible, one remaining in that state so long that the services of a physician were required.

Now is it not a peculiar state of affairs, to say the least, when, in order for one class to prove its superiority over another, it becomes necessary to knock several of the latter insensible that the desired result may be brought about? It really does seem as though in the institutions of learning, in so highly

a civilized country as ours, such a semi-civilized practice were not desirable and should be done away with.

Unless the Faculty interfere, and this they will not do to any great extent at present, there is but one method by which to bring about the abolishment of the useless and foolish custom: that is, if its abandonment seems desirable, for the upper-classmen to take it in hand. If they wish that this practice be done away with, and it is probable that the majority do so desire, they have but to assert their authority as upper-classmen, and then what can the lower classes do but succumb deferentially to the "powers that be"?

Let us hope then that this institution may be done away with in our colleges and universities, and that only the pleasanter and more effectual methods of accomplishing the object of the cane-rush be retained.

THE MILITARY RESOURCES OF THE UNITED STATES.

We need to review but a few years of our history to learn the military strength of the United States.

The power of the country and the discipline of our men and our material resources must indeed have been great, to have enabled it to plunge suddenly into a civil war; to carry it on with our immense armies for four long years, with the loss of hundreds of thousands of men, and an expenditure of money to the amount of thousands of millions of dollars. But to emerge from the contest and retain the unity of our land, and in a single decade to disband the tremendous armies without violence, to maintain our credit in the midst of such vast expenditure, and to begin so soon after the war to reduce the national debt at the rate of several millions of dollars per month; shows the unbounded resources and the character of our people.

The history of the United States is unprecedented in the history of the world.

In 1790 the rank and file of the army was fixed at 1216 men.

In 1814 the English, with a force 3500 strong, marched into Washington, the capital of the country, capturing and burning it. In 1861 the regular army numbered only 13,000, but in April of that year Pres. Lincoln called for 75,000 volunteers for three months; in May 42,000 more were required, and as this force was inadequate another call was made in July for 500,000 men.

As the tremendous struggle continued, the conscription came into use, and in 1863 a levy of 60,000 was made, then another of a half million and still another of half a million.

Of a population of 32,000,000 of souls, 4,000,000 were in the armies at that time. Compared with this gigantic struggle, the celebrated uprising of the French in '49 and the contest between France and Prussia of '71 and '72, sink into insignificance.

Yet in less than three years after the surrender of Lee, these many millions were disbanded, and the regular force fixed at 25,000 men.

In the art of war as in other pursuits, the necessary elements to success are mind, materials and physical vigor.

We first ask has America mind? and the answer is, yes! The Americans have proved themselves capable of adjusting themselves to their surroundings, by the rapidity with which the farmers, manufacturers and men of business at once adapted themselves to the demands of war. Men who had never borne a musket at once became efficient soldiers.

The American mind gave to the world not only the cotton-gin and the telegraph, but also the Colt revolver and the Rodman, and Gatling guns for use, in war. This mind as seen in the leaders of armies has attracted the attention of the world.

Washington is acknowledged to be superior to Wellington, and Grant to Von Moltke.

American mind is especially shown in the citizens who can so quickly transform themselves into efficient soldiers, and who can with such patriotic common sense so soon take up the peaceful pursuits of life.

And yet our military strength is not what it would be with a larger number of schools for military training.

This want, however, we have begun to supply by the different colleges and schools which combine military exercises with literary work. We have in nearly every state a college founded under the Land Grant, where military science and tactics are taught by practical and thoroughly competent officers

detailed from the United States army. The value of such instruction is proved by the rapidity with which the "West Pointers" rose in the army during the rebellion.

In speaking of the resources of the country we can say that the credit of the United States, as a nation is unsurpassed. The country's immense annual product of gold, silver and iron as well as the agricultural products of corn, wheat and cotton, furnish it with an abundance of means for carrying on warfare.

We now come to our third requisite, physical vigor.

Who can say that we are lacking in that? In the time of the Rebellion one-eighth of the people served in the armies.

With that proportion, at the present time we could put an army of some 6,000,000 of men in the field.

We have thus glanced at the present strength of the United States of America, but with the population, civilization and wealth increasing at the present rate, who can say what the ultimate power of the nation will be?

The warfare of the future is indeed shrouded in mystery, but we know enough of the present power of the American mind, the material resources and the physical vigor, to assure us that our country need have no fear of its ability in the future to successfully defend its liberties against any attack that may be made by a foreign foe.

We must never forget that the quality and the character of our people is the basis of all military strength.

> "What constitutes a state?
> Not high-raised battlement or laboured mound,
> Thick wall or moated gate;
> Not cities proud with spires and turrets crowned:
> No,—men, high-minded men,
> Men who their duties know,
> But know their rights and knowing dare maintain;
> These constitute a state."

COLLEGE SPORTS.

In all American colleges there has been during the past few years a very noticeable increase in the interest manifested for athletic contests. The rivalry in sports existing among different educational institutions is so great that it has become almost proverbial, and intercollegiate contests are not maintained merely because they are beneficial but because they are absolutely necessary. A college that has no intercourse in athletics with similar institutions is sure to be one of few students and more or less obscurity. While some think such contests should be abolished, saying they are productive of no good, but many harmful, results, by far the greater number take an opposite view of the case. Both inter-class and inter-collegiate sports should be sanctioned, provided they are carried on judiciously. No one doubts the physical advantages obtained in out-door games, and they will continue to be popular as long as contests with other colleges are allowable. No man can do good work mentally if he is not in good condition physically, and, accordingly, every student should take as much exercise as he needs. At our College, we have an excellent campus, admirably situated as regards its proximity to the buildings. and, during the fall and spring terms, many take advantage of it, but in the winter there is no way to obtain the needed exercise. The need of a gymnasium has become more apparent every term, and we trust the entering class next September will find that for which other classes have searched in vain, viz.: the College gymnasium. The military drill is excellent for giving a man a good physique, but we obtain this exercise only three hours a week and the muscles of the body are not sufficiently developed by it. The number of colleges without gymnasiums is very small and growing beautifully less;—we shall not be sorry to pass from the minority to the majority. When we obtain the new gymnasium, the catalogue will show an increased number of undergraduates and they will have the satisfaction of knowing they are on an equal footing with other institutions regarding their facilities for physical culture.

Foot-ball was given due attention during the fall term, and a very fair team represented the College. But five games were played and, although we were defeated in three, nevertheless the small scores show that the winning teams were but little, if any, superior to our eleven. The material in our team was certainly equal to that of our opponents, but their superior systems of training gave them the advantage desired. The superior work of men in condition is apparent to all, and no team should attempt to rep-

resent its college, even if the most competent players are selected, unless the men are so trained as to bring out their physical abilities to the utmost. The smaller the number of students from which to choose, the closer should be the attention to the training. There is no reason why we should not do even better work next year than ever before, as the team will have the advantages of gymnasium training, and will, it is hoped, go to a training table. This lack of gymnasium training in the past has prevented the men being in suitable condition for the opening games, but in the future this can be obviated. The formation of another league, to include Boston University, Tufts, Worcester Polytechnic Inst. and M. A. C. is considered a feasible plan among foot-ball men here. There is no reason to doubt the success of such a combination, and the teams being stimulated by the hope of winning the championship would play some excellent games. We trust something can, erelong, be done about this, and it is the hope of every M. A. C. man that we be represented in some such league next fall. Besides the customary class contests, two games were played by an eleven from the Sophomore and Freshman classes with the Amherst Freshmen. The first game resulted in a tie, neither side scoring; in the second the Amhersts were victorious, 9 to 0. One of the best games on the campus was that between '91's eleven and a team from the Amherst High School and Mt. Pleasant Seminary, in which the Freshmen had everything their own way:—Score, 42 to 0.

The following are the dates and scores of the College Eleven's games:

Oct. 8.—M. A. C., 17; Williston, 10.
Oct. 15.—M. A. C., 4; Trinity, 32.
Oct. 25.—M. A. C., 0; Amherst, 10. (30 min.)
Oct. 26.—M. A. C., 26; Williston, 0.
Nov. 5.—M. A. C., 0; Worcester Polytechnic Institute, 10.

Tennis was played considerably during the fall term, both on the society courts and also in the Drill Hall, but it was almost wholly neglected during the winter. It was confidently expected, at the beginning of the College year, that there would be a tournament in the winter, on the Drill Hall court, to decide the class championship but, for some unknown reason, the project was abandoned. As soon as the weather permitted in the spring, the courts of the D. G. K., Q. T. V. and Shakspearian Societies were rolled and marked out and the Phi Sigma Kappa Society have just completed a new court near that of the Q. T. V. These have been in daily use during the latter portion of the term. Tennis is one of our most invigorating sports and can be enjoyed by all, as it contains none of the dangers of foot-ball and base-ball, and gives the player an agility and carefulness not to be gained in other games.

During the winter term the idea of forming a Polo team originated. This being an innovation in the College, it was considered impracticable by many, but, at last, through the efforts of a few, a team was organized and did very creditable work, winning three of the four games played. The first game was with the Amhersts and was most exciting throughout, the result being eight goals for M. A. C. to seven for her opponents. The other three games were with the Reeds, of Northampton, (a team that has been considered one of the best in this portion of the state), and in two of these we were the winners. In the games played our team obtained twenty-one goals while its opponents were winning eighteen, divided as follows:

Jan. 21.—M. A. C., 8; Amherst, 7.
Feb. 11.—M. A. C., 2; Reeds of Northampton, 3.
Feb. 18.—M. A. C., 5; " " " 4.
Feb. 25.—M. A. C., 6; " " " 3.

Custom demands that Base-Ball be mentioned in this article, otherwise we would be only too glad to omit it. The prospect last fall for a nine to represent the College this spring, was quite promising, but, sad to relate, our hopes were disseminated early in the season. In practice some almost phenomenal exhibitions were given, but when a game was in progress, all such playing was unknown. Lack of united team work prevented a better showing and when the players find out that it is better to try for a ball even if the player is likely to lose it, than to neglect trying for it through fear of a black mark in the error column, we shall have a much superior nine. The opening game with the Northamptons was the best of the year, due, perhaps, to the fact that the new caps and sweaters were worn for the first time. If our means would have allowed, we might have encour-

aged the players by purchasing new caps and sweaters for every game but, unfortunately, our treasury was not in such a condition of repletion as to permit such a testimony of our regard for the players to be made. The quality of the playing seemed to grow less and less as the season drew to an end, and the last games awakened but little interest. The class games afforded more pleasure than those played by the College nine and if a series were played, next spring, among the classes, for the championship, there would be no little amusement and excitement. Our gymnasium—that is to be—will give all sports a new impetus, and we will now be enabled to resume our long neglected custom of observing Field-day and to encourage friendly competition among the students in the different events. We have men here, capable of making good records in athletics, and we hope more interest will be taken in sports, in the future, than has been in the past. Let every man come back, next term, with the firm resolve, not only to stand higher in his class than ever before, but to raise the standard of our athletics in the best way he can.

THE WORK OF THE HATCH EXPERIMENT STATION.

In speaking of the work of the "Experiment Department of the Massachusetts Agricultural College," or the Hatch Experiment Station, as it is commonly called, it would be most natural to take up the different departments successively.

These, briefly, are the Entomological, under the direction of Prof. C. H. Fernald; the Horticultural, under the supervision of Prof. S. T. Maynard; the Agricultural, of which Prof. Stockbridge has control at the present time; and the Chemical, the work of which will be done by the State Experiment Station, of which Prof. C. A. Goessmann is the director.

The Entomological Department has begun in earnest, investigations in relation to the numerous insect pests, which are annually the source of a large amount of loss to the farmers and fruit growers of the State, and it is the aim of the director to accomplish such results as may be of value in subduing or checking their ravages.

With this end in view he has in his employ several of the students of the College, who spend what time they can afford in searching fruit trees, ornamental trees and shrubs, field crops and gardens for such insects, or their larvae, as they may be able to find, which are doing any damage whatever.

These are collected in sufficient numbers for experimental purposes and taken to his house, where the work is now carried on, thus coming under his personal observation.

Part of these larvae are carried through their transformations, each change being carefully observed and noted, and if unknown species are found, they are minutely described at every stage, their food plants noted, and specimens are preserved for future reference.

Others are experimented upon with various insecticides for the purpose of determining what substances may be used most successfully in their destruction.

In order that this work may be extended as far as possible, so as to bring under consideration insects from every part of the State, the director has called for "help on the bug question," from everyone who is troubled by insect pests of any kind. He desires that inquiries may be made in regard to insects, and that specimens will be forwarded to him, together with as full a description as possible of their habits, as for example, the plants they infest and the manner in which they work.

In addition to these investigations indoors, practical experiments are being carried on in the field for the purpose of determining the value of various insecticides, and the best and simplest manner of applying them. These are applied, in solution or suspension in water, by showering, or by means of various styles of bellows made for the purpose they are dusted on.

These trials serve not only for determining the value of the insecticide in question, but also the efficiency of the apparatus with which the work is done, and, with this fact in mind, some of the manufacturers of such apparatus have sent samples to the Station for the purpose of getting them a thorough trial, hoping thereby to obtain knowledge which will be of value to them financially. Such needed implements as their makers did not see fit to present, have been purchased and will be thoroughly tested and reported upon.

Thus quite an assortment of force-pumps, bellows and other implements, embracing most of the modern improvements, have come into the hands of the director and will be used under his supervision.

This, briefly, is the work which is being carried on by this department for the benefit of the farmer and fruit-grower, and also the manufacturer, and it is earnestly hoped by those in charge, that better accommodations will soon be had, which will allow of the works being carried on in still wider fields of observation.

The Horticultural Department, the work of which will be carried on under the direction of Prof. S. T. Maynard, has open before it a wide field of investigation, and undoubtedly results will be reached which will be of great value to farmers and horticulturists everywhere. A building is being constructed in which the house experiments will be carried on, and work is already in progress in regard to determining the effect of different fertilizing elements upon various plants, and in the cross fertilization of strawberries, about which there is yet much to be learned.

As yet the work of the Agricultural and Chemical departments has not taken any definite shape, but it is hoped that ere long these may begin investigations which shall prove to be invaluable to the farmers of the State.

The results of the work of these departments will be given to the public in the form of bulletins, which will be issued periodically. These will be sent to any address upon application to the Director of the Hatch Experiment Station, Amherst, Mass.

ADDRESS TO THE SENIOR CLASS.

The baccalaureate sermon was preached by Rev. C. S. Walker, Ph. D., from the text Luke 4: 18, 19, "The Spirit of the Lord is upon me, because he hath annointed me * * to preach the acceptable year of the Lord." The central thought of the discourse was suggested by the question, In America's future is there approaching the acceptable year of the Lord—a veritable year of jubilee?

I. What are the facts? The fact that like a lowering cloud intercepts our hopeful vision of the promised year of jubilee is that here in our midst are millions of our people who are poor, broken-hearted, captives, blind, bruised.

II. What is the remedy? The union of the individual, the church and the state, in the great work of securing for every family in the United States the possession of its own homestead, and abundant leisure which its members shall enjoy and utilize in the culture of the best in human nature, offers a practicable and efficient method of fulfilling Christ's idea of proclaiming glad tidings to the poor, and of ushering in the acceptable year of the Lord.

In closing the speaker spoke as follows:

GENTLEMEN OF THE GRADUATING CLASS:

In forecasting the future of your country, you are to be congratulated upon the fact that you live in a land and in the generation that witnesses the State taking great pains to establish and liberally endow agricultural colleges, organized and equipped for the purpose of hastening as rapidly as possible the coming of that day when each family shall possess securely a home of its own and sufficient leisure for each of its members to utilize and enjoy in the culture of the best in human nature.

For four years you have enjoyed the advantages of life in such an institution. Your whole training has been such as to fit you, each and all, to do your part toward hastening the coming of the acceptable year of the Lord.

Coming from homes of your own, you know their worth, and here have you been taught how to defend the hearth-stone, where father and mother nourished your infant life, if necessary, with the sword, the musket, the thunder of artillery, with all the power that comes from military organization and discipline. But may that stern necessity never confront you. If you practice the arts of peace you have here learned, and will teach them to your fellow citizens, there will be no need of your exchanging the plough-share for the sword.

You have here learned how to beautify the home with the flowers and fruits of the meadow, the field, the garden, the orchard and forest. You have learned how to call by name the living creatures that move about the home and how to make them minister to home life, comfort and happiness.

You have been made familiar with the secret laboratory of nature in which she, like a good

mother, works out her beautiful and wonderful gifts for her children.

Your attention has been directed to the study of mankind; you have contemplated human nature as revealed in history and in literature, meditating upon the deeds and the thoughts of the men whose labors have produced the world of to-day with its science, its ceaseless activity, its institutions, its modern civilization; you have studied yourselves, analyzing your faculties of mind and heart and will, and comprehending the nature of bodily vigor; you have learned how you and your fellowmen are organized into the community and the State, and what are the rights and duties of each and how the individual and the general welfare are related.

In a word, you have here been fully taught how to earn abundant leisure and how leisure once secured you may utilize and enjoy it in the culture of the best in human nature.

May no one of you ever be classed among that strange species of human beings, found among both the rich and the poor, who with abundant leisure at their disposal are at a loss how to kill time; who perish intellectually, morally and physically because they either cannot or do not improve their leisure, of their own incitement, in the culture of the best in human nature.

There should be no such creature on God's earth as an unemployed man! An unemployed man, woman or child in this age of magnificent opportunities for thought and action is a sad commentary on the decay of manhood. Thank God, my young friends, that each of you may set himself to work and ever and always be his own employer.

Consecrate your lives not to the worship of Mammon, nor to the slavery of selfish ambition, but do your part nobly and well in securing for yourselves and for your fellow countrymen a home, inalienable, in which every man shall utilize and enjoy abundant leisure in the culture of the best in human nature.

In devoting yourself faithfully to this noble end you will soon discover that he who was anointed by the Spirit of the Lord to preach the Gospel to the poor, is your co-laborer. In the accomplishment of your end you will meet many difficulties and will need all the sympathy and inspiration you can procure. In Christ Jesus will you find a never failing source of spiritual power. From a study of His life and character and in the practice of the precepts derived from the principles of action he disclosed will you learn how to heal the broken hearted in your own and other homes, how to bring deliverance to captives, how to open blind eyes, how to set at liberty them that are bruised.

The culture of the best in human nature cannot but bring one speedily to the Christ who as the Son of Man embodied in himself the perfection of manhood. No other qualification for your work can equal that which comes from a baptism of the Spirit of Christ.

When the Spirit of the Lord shall anoint you, then may you proclaim the acceptable year of the Lord, and from the exalted eminence with glorified vision will you discern the coming of that year of Jubilee to America, when every family, secure in a home of their own, shall enjoy and utilize abundant leisure in the culture of the best in human nature, and so recognize the glory and majesty of the Divine Nature as revealed in our Father in the Heavens.

LOCALS.

Base-ball, '90-35, '89, 7.

Play ball! play ball, everybody!

J. S. Parker, '88, is at Cornell.

W. P. Smith, '85, is in New York.

Pond.—Dif. kinds of roses, as *tubrose.*"

H. K. White, '80, is at home in Whately.

"Steady there! don't run over the music."

June 1 work was commenced on the Drill Hall.

Eighty-eight planted her class tree in the evening.

Say, George, how goes Frank's parlors?—"*baby.*"

Prof. Sam to Pond.—"Give an example of species."

"We have some *large* men here if they arn't very tall."

"I smiled on her, and she actually turned up her nose at me."

E. J. Dole, '88, is at Los Angeles, Cal., on a fruit farm.

Whoa, Dick, whoa, Dick, steady, Dick, wait till we light up.

G. W. Cutler, '88, is studying in the Harvard Medical School.

We would like to hear of a base-ball nine that ours could defeat.

Some of the fellows are not satisfied with *one* girl, and so take two.

Hull '88 wants to know where the seed of the Banana is to be found.

The Seniors have their class supper Wednesday evening at Frank Wood's.

The Senior class invitations are the work of Bennage & Elliot of Philadelphia.

Ruggles says that "the line more remote is at a greater distance from the centre."

The Senior class was represented at Boston University this year by R. B. Moore.

Never fear of keeping a black handkerchief and a birthday book for a memory bill.

Hurley says, "Two triangles are equal because they are (in) *equilibrium*" (equiangular).

June 4 Holland was on the grounds, and took views of the buildings and battalion pictures.

Prof. W-l-k to Senior.—"Gentlemen, come to recitation now and don't make so much noise."

L. C. Stillings, '90, is with the Goodyear Rubber Co., cor. Lincoln and Essex streets, Boston.

F. R. Huse, '89, is clerking in Alfred Field & Co.'s importing house, Chambers st., New York.

Prof. W-l-k.—"If this is a sample of what the examination is to be, it won't be very creditable."

Some of the Seniors like to get out of recitations before the class is dismissed, but Dr. Fernald objects.

W. A. Sprague, '89, has received an appointment to West Point, and reported there for duty June 12.

Why should a student unable to pass his examinations still be happy? Because he is so well *conditioned*.

Prof. Fernald (to Juniors).—"Gentleman we will go out collecting to-day, if it isn't too cold for Mr. Woodbury."

Bliss, C. E., '89.—"Why do all the prize speakers get pieces from *Anon?* I can't think of his first name."

Ninety and Ninety-one celebrated Arbor Day by planting class trees, the former replacing the one set out by '72.

Eleven of '88 matriculated with Boston University, but did not receive any invitation to their Commencement.

Inspector-General Roger Jones, of the U. S. Army, inspected the Military Department of the College, June 7.

The Freshmen have been obliged to defer their "Field" day until fall, owing to the extreme lateness of the season.

Prof. Sam to Belden.—"What does decurrent mean?"

Belden.—"Without current."

Hello, Billy, have you been chewing that gum ever since the last polo game? Should think the gum would be stale by this time.

Prof. Warner to Davy.—"Mr. D., do you know what you are talking about?"

Mr. Davenport.—"No, sir."

Prex. (in Junior recitation).—"Mr. Nourse, what was the first thing Spenser wrote?"

N.—"Shepherd's *Purse*" (Shepherd's Calendar).

In the future, the Cadets, with the exception of Senior officers, will not be obliged to wear dress coats, and consequently the cost of uniforms will be greatly decreased.

The geological trip of the Seniors with Dr. Fernald was deferred this year, owing to the small number who were willing to hire teams. The class might have gone *barefooted*.

Prof Maynard (in Forestry).—"Mr. Bliss, what kind of a ladder is recommended for use in pruning evergreens?"

B.—"One like the picture."

Four of the graduating class will go to work at the Experiment Stations, three at the State Experiment Station, and one under the Horticultural Department of the Hatch Experiment Station.

A long needed acquisition to the equipments of

the Military Department is to be made in the shape of new sabre belts, which it is expected will be here in readiness at the beginning of next term.

A large window has been put into the basement of the South Dormitory, to secure more light and better ventilation, and it would be an improvement if the boards were removed from the other windows.

The present mortar platforms are so badly worn that they prevent cadets from doing justice to themselves. They should be replaced by new ones, but, thanks to Capt. Hayward, they have been put in condition for Commencement.

Prof. Maynard and Dr. Fernald are doing a good deal of hard work for the farmers of the state. The Faculty should not be obliged to perform their College duties and the work of the Hatch Experiment Station without extra compensation.

Dr. Walker.—"Mr. Cooley, what time is it?"

Mr. C.—"Three minutes past twelve."

Dr. W.—"It is three minutes past twelve. Now all those who haven't watches know what time it is, I'll let the class go when the bell rings."

It is hoped that the time is not far distant when the College will extend the sidewalk leading from the Chapel towards the county road, so that the fellows will be able to go down town in wet weather without getting stuck in the mud.

On April 7th a majority of the class of '88 availed themselves of the invitation of their classmate, Mr. F. S. Cooley, to take a *stroll* in the mud to his home in Sunderland, where they spent the afternoon eating sugar, and all voted it a first rate time.

Dr. Walker.—"Mr. Newman, are you in a hurry to leave?"

N.—"No, sir."

Dr. W.—"Then please put up your watch. It is very impolite to be looking at it when any one is reading."

"Lieut." has worked hard for the College during the past three years, and we are glad to see his efforts crowned with success. It is now expected that the cadets will have a warm hall to drill in the coming winter, and a gymnasium for the benefit of those who may desire to use it.

We would call attention to the arrangement and appearance of the grounds and buildings of the Botanic Department. Much valuable time has been spent in the laying out of ornamental plots, and the planting of shrubs and trees, and the results of this work are worthy of the attention of every one.

The new burners which have been placed in the Chemical Laboratory seem to give satisfaction to all who use them, and it is hoped some arrangement will be perfected by which they can be used in place of the common alcohol lamp, which is both inconvenient and unsatisfactory for general work.

Mr. Burnette seems to have had hard luck with his boarders the past year,—one by one they left him until only four remained,—and on June 1st he closed his doors and removed to South Amherst, where he purchased a farm, with the intention of going into the poultry business. In this new venture we wish him success.

Tuesday, May 21, Dr. Fernald delivered a lecture on geology, to the Seniors, from the roof of the Old Chapel.

Lieut. (in Senior recitation).—"Mr. Knapp, what is war, bloody war?"

K.—"A fight between two nations or parties."

Lieut.—"Would a fight between you and me be a war?"

K.—"It wouldn't be *much* of a war."

STORM INCIDENTS.

"Sleepy" Hull lost his white hat.

"I'll meet the Seniors as usual this morning."

"The man that fired that snowball will repent himself."

G. W. Alger joined the fire brigade, and did *noble* work in extinguishing the fire.

There came near being a famine here, as the "Hash House" nearly run out of provisions, having barely enough to keep the regular boarders alive.

Dr. Wellington on his way to M. A. C., *broom* in hand, encounters a party of students headed by Prof. Maynard, and the following dialogue takes place:

Dr. W.—"Shall we have recitations to-day?"

Prof. M.—"No."

Dr. W.—"Why not? Arn't the boys there?"

Prof. M.—"Yes, but you ain't."

Lewis Clavert Leary died April 3d from heart disease. He was born April 4, 1860, and his preparation was made at Williston Seminary, Easthampton, and was graduated from there in 1882 with honors. He entered the class of '85, M. A. C., in the fall, and the three years spent within these walls were full of hard work. He acted as assistant librarian to Pres. Goodell and drilled the different classes in elocution. He took B. Sc. from Boston University; from here he entered the Harvard Divinity School and was to have graduated in June. He was loved by all his friends, and mourned for by his class and society brothers.

In Memory

LEWIS CALVERT LEARY.

Class of '85.

Died, April 3, 1888.

FOREVER WITH THE LORD.

"Forever with the Lord!"
Amen so let it be—
Life from the dead is in that word,
'T is immortality.
Here in the body pent—
Absent from Him I roam—
And nightly pitch my moving tent
A day's march nearer home.

"Forever with the Lord!"
Father, if 't is Thy will,
The promise of that faithful word,
E'en here to me fulfil.
Be Thou at my right hand,
Then can I never fail,
Uphold Thou me and I sha l stand,
Fight, and I must prevail.

So when my latest breath
Shall rend the veil in twain,
By death I shall escape from death,
And life eternal gain.
Knowing as I am known—
How shall I love that word!
And oft repeat before the throne
"Forever with the Lord!"

CYCLE SUPPLEMENT.

The Cycle Supplement will be issued as usual at the close of graduation exercises Tuesday morning. It will contain a complete account of Commencement exercises, the list of prizes, and other interesting matter. Do not fail to purchase a copy. Price two cents.

PERSONALS.

'71.

William P. Birnie is engaged in the manufacture of paper and envelopes in Springfield.

William Wheeler is a civil and hydraulic engineer. Office, 75 State St., Boston.

'72.

J. W. Clark is doing quite a successful business on his fruit farm in North Hadley.

J. C. Cutter, M. D., sailed for Germany, May 31, where he will continue his studies in medicine.

Lemuel LeB. Holmes is practicing law in New Bedford.

William C. Whitney is an architect in Minneapolis, Minn.

The first Hatch Experiment building for Massasetts is now being erected, in the Horticultural Department, in form of a plant-house and workroom, under the auspices of Professor S. T. Maynard. This department is doing excellent work and is making many improvements.

'73.

Seth S. Warner is doing a thriving fertilizer business in Northampton.

Dr. Charles Wellington is erecting a fine residence at the corner of Lincoln avenue and Amity street, opposite Dr. Goessmann's.

'74.

John M. Benedict, M. D., is a rising physician of Waterbury, Conn.

Edward P. Chandler in engaged in sheep husbandry at Fort Maginnis, Mon.

'75.

Thomas R. Callender is a very successful florist in Wellesley Hills.

'76.

John Bellamy, of Nichols, Bellamy & Co., hardware dealers, may be found at the firm's new stand, 189 Devonshire St. and 52 Arch St., Boston.

Charles F. Deuel is doing a thriving business at the Amherst House Drug Store.

Joseph M. Hawley is a banker in Berlin, Wis.

Hiram Kendall, of Providence, R. I. will again give the prizes for the Kendall Prize Speaking.

J. E. Williams had the misfortune to break a bone in his leg early in the spring, which made it impossible for him to attend to his duties at the office of the Amherst *Record* for several weeks.

'77.

Atherton Clark has gone abroad for R. H. Stearns & Co's dry goods house of Boston, again this season.

Joseph R. Hibbard is farming in Stoughton, Wis.

'78.

Arthur A. Brigham, of Marlboro, is Master of Mass. State Grange. He has done some excellent work for the farmers in the Legislature the past winter.

Charles O. Lovell has been appointed captain of the militia company formed in Northampton.

In August H. E. Stockbridge will return from Japan where he has been for the past three years.

John Hosea Washburn is pursuing his studies of chemistry in Göttingen, Germany.

'79.

S. B. Green now has charge of the horticultural department at the Minnesota Experiment Station, at Anthony Park. He is also Professor of Horticulture in Minnesota University.

Roscoe W. Swan has a successful medical practice in Worcester. Office, 32 Pleasant St.

'80.

William C. Parker is a real estate and insurance agent. Office, 28 School St., Boston.

William G. Lee, draughtsman for Gardiner the architect, of Springfield.

'81.

Boonzo Hashigushi has lately gone to Germany for the Japanese government.

J. L. Hills is chemist to the Vermont Experiment station at Burlington.

E. D. Howe was elected Secretary of the State Grange at the annual meeting held at Springfield. His address is Marlboro, Mass.

Edward B. Rawson expects to teach and at the same time pursue his studies in Latin and Greek in an academy near Boston.

Henry H. Wilcox is very successful as a sugar planter at Lihue, Kauai, H. I.

'82.

William H. Bishop has charge of the out-door work at the Maryland Experiment Station, under Major Alvord.

George D. Howe has lately been appointed Justice of the Peace, at North Hadley.

Morris B. Kingman the past spring has acted as Prof. Maynard's assistant in the Horticultural Department of the College.

James B. Paige, recently graduated from Montreal Veterinary College, is now located as veterinary surgeon on Pleasant St., Northampton.

Charles S. Plumb is Professor of Agriculture at the University of Tennessee, at Knoxville. He also edits *Agricultural Science.*

W. E. Stone, formerly assistant at the Mass. Experiment Station and now in Germany, has accepted the Professorship of Chemistry at Tennessee University at Knoxville. He returns from Germany in August.

'83.

Charles H. Preston continues as chemist with Dr. B. F. Davenport, State Analyst, Boston.

The engagement is announced of H. J. Wheeler, a graduate of the Agricultural College and now studying in Germany, to Miss Matilda R. Schwartz, eldest daughter of Dr. N. C. Schwartz of Kansas City, Mo.—*From New England Homestead.*

The marriage of Joseph B. Lindsey of Pawtucket and Miss Fannie Dickinson of Amherst will take place at the bride's father's June 20. The newly married couple will make their home in Pawtucket, R. I.

"Bring flowers, fresh flowers, for the bride to wear!
They were born to blush in her shining hair.
She is leaving the home of her childhood's mirth.
She hath bid farewell to her father's hearth.
Her place is now by another's side—
Bring flowers for the locks of the fair young bride!"

'84.

H. D. Holland has taken the hardware business formerly conducted by his father in Amherst.

Llewellyn Smith is now engaged as traveling salesman for Bowker's Fertilizer Co.

'85.

The engagement of E. W. Allen and Miss Estella Perkins is announced. Mr. Allen severs his connections with the Experiment Station, July 1st, and shortly after sails for Germany where he will take a course in chemistry at a university in Göttingen.

J. E. Goldthwait graduates from Harvard Medical School this month.

C. S. Phelps is vice-director of Storrs School Agricultural Experiment Station, also associate professor of agriculture.

I. N. Taylor, Jr., is in San Francisco, Cal., with Thompson & Houston Electric Co., 513 Montgomery street.

'86.

W. H. Atkins has charge of J. T. Lovett's poultry yards at Monmouth Nursery, Little Silver, N. J.

W. Ayres the past year has been teaching at King's School for Boys in Stamford, Conn.

D. F. Carpenter is in the employ of B. A. Fowler & Co., general agents in New England for the International Cyclopedia.

C. W. Clapp is in Colorado.

Richard F. Duncan is a student in Albany Medical College. Address 12 High street.

W. A. Eaton is clerking in a bank in Omaha, Neb.

C. F. W. Felt, civil engineer, with Atchison, Topeka & Santa Fe Railroad.

Osgan H. Ateshian and Miss Leila Evelyn Dewey united in marriage June 12. They will spend the summer traveling in Europe on their wedding tour.

R. B. Mackintosh is with J. B. Thomas, wool puller, Peabody.

K. Sandborn is at Riverside, Cal.

George S. Stone is farming at Otter River, Mass.

'87.

F. B. Carpenter, chemist, Massachusetts Experiment Station.

W. E. Chase is surveying lumber in the mountains of California this summer.

C. W. Fisherdick is studying law in Lincoln, Neb., with his uncle.

E. R. Flint, chemist, Massachusetts Experiment Station.

Fred H. Fowler and Mattie Scott are to be made one soon after Commencement. They will make their home in Roslindale.

James M. Marsh is salesman for G. E. Marsh & Co, Lynn, manufacturers of "Good Will Soap."

Charles L. Marshall is engaged in market gardening in Lowell.

Thomas F. B. Merhan is studying law at Harvard Law School.

J. C. Osterhout is in the patent medicine business in Lowell.

E. F. Richardson is farming in Millis.

H. N. W. Rideout is traveling salesman for S. S. Pierce & Co., Winter Hill, Mass.

W. N. Tolman is with Ernest W. Bowdwitch, sanitary engineer, Boston.

C. H. Watson is studying law at 122 Tremont st., Boston.

William Hutson Caldwell is assistant agriculturist, Pennsylvania State College Agricultural Experiment Station, and instructor in agriculture, Pennsylvania State College.

Prof. Stockbridge (to one of the Seniors).—"That will do Mr. ——, I will ask some one else, as I don't want to do all the reciting myself."

D. G. K.
1868.

The Cycle.

SUPPLEMENT.

M. A. C.
1888.

COMMENCEMENT EXERCISES.

Sunday's exercises consisted of the Baccalaureate sermon, in the forenoon, by Rev. C. S. Walker, and in the evening the address before the Young Men's Christian Association, by Rev. Calvin Stebbins of Worcester.

The evening's exercises were opened by an organ voluntary, by Mr. S——, and singing by the octette followed by prayer by Dr. Walker; after which the speaker of the evening was introduced. He announced as his subject "Duties of the American Citizen," and took for his text, Psalms 137: 4-5.

The speaker said that each of the great nations of the world before it left the stage, contributed something to the nation following, and that the duty of each American citizen is to be true in principles, not only to his country, but also to all mankind, and to generations that shall come after him.

We, as a nation, have a history, and a splendid history, and all along through this history there are scattered acts and thoughts far in advance of those in the past, and in this connection, it is the duty of every American citizen to make himself known of the history of his country.

Further, it is no less important that he should educate himself to trust the people, as it is upon trust in the people that government is founded, and if our government is here to stay, it is because each trusts his fellowman.

It is the duty of the American citizen to respect the position and sentiments of at least a majority of his fellowmen.

Our age is one that worships comfort, and there is danger that pleasures and enjoyments will take too great a place in our life. The American people are sensitive to the duties of domestic virtue, but it is lamentable to see how thoughtless they are.

Every American citizen should know the great fundamental principles of law and order, and each one should charge himself with giving blessings to one and all.

Finally, we should link religion and law together, as it is in so doing that the grand results will be reached.

This address was followed by singing, and the exercises were closed by the benediction pronounced by the Pastor.

PRESIDENT GOODELL'S ADDRESS.

Young Gentlemen of the Senior Class:—It is not without emotion that I see you here to-day, for there comes vividly back to me the time when, a quarter of a century ago, I too stood as you are now standing on the threshold of the great world, looking out on to its busy scenes and wondering where my place would be, and what the work I should be called upon to do. I cannot help rejoicing with you in all your glad hopes and aspirations, in your generous enthusiasms and warm-hearted confidence, for in the vigor of your young life everything now seems possible and the difficult, easy. And yet there is a feeling of sadness blended with it all, for I know that the way will not be one all of ease, and many times you will be tempted in your despair, to give up the contest and turn your back upon it. What better wish, then, can I offer you than that you should fill your place in life,—fill it so completely that there can be no question about it,—fill it with your might,—fill it in all honesty of heart and sincerity of purpose. Let there be no half-way work about it. If it is worth the doing at all, it is worth the doing well, and the judgment of mankind will estimate you according to your doing. The world admits no shirks and the half-in-earnest man receives but half recognition. Put your whole soul into your work, and as sure as day succeeds the night your reward will come. The patriarch of old wrestled with the angel of the Lord through the entire night and would not let him go even at the coming of the dawn till he had received the wished-for blessing. He was terribly in earnest, and the shrunken sinew and the hollow of his thigh bore witness to the intensity of his purpose.

Be not cast down by the thought that yours is but a humble place and it makes no difference what you do. It does make a difference and the world cannot do without you. It is the filling of just such places that makes the perfect whole.

> "The healing of the world
> Is in its nameless saints. Each separate star
> Seems nothing, but a myriad scattered stars
> Break up the night and make it beautiful."

To fill worthily your place you must look up. Walk with your face downwards considering the things of earth, and your purposes will be low and grovelling. Accustom yourself to look upon labor

as low,and naught can save it from being drudgery. Join brain with hands and you emancipate it. "Drudgery without intelligence is slavery. Labor with intelligence is freedom." High thoughts will lift you—low ones degrade you. Respect for things above will draw you upward to their level. An instructive fable tells us that men once walked upon all fours, like the beasts of the field, but they caught sight of the stars, and the heavenly attraction lifted them to the human form and semblance of the divine. And so with you, with eyes turned upward to the heavenly light you will lose the dross of earth and walk in that divine radiance which is a part of God.

And now as we set upon you the seal of our approval, and send you forth to justify to the world our action, we bid you God speed in all that is true and right, and as we grasp your right hand, we say from out the very depths of our hearts, not goodbye, but God be with you.

The Kendall Prize Speaking took place last night at 8 p. m. The speakers and their subjects were as follows:—*Freshmen*,—W. W. Gay—Death of Garfield; W. A. Brown—The Capture of Quebec; H. T. Sanderson—The Confederate Sergeant; G. E. Richards—The Black Horse and His Rider. *Sophomores*,—T. P. Felton—Unjust National Acquisitions; J. S. West—The Army of the Potomac; F. W. Mossman—The Man for the Crisis; David Barry—The Victor of Marengo. The judges were: T. S. Smith, S. S. Warner, J. E. Tuttle.

The D. G. K. Fraternity held its 20th annual reunion at the Amherst House, Monday evening. A secret session was held previously in the chapter rooms, a goodly number of alumni being present. The supper was excellent and, in the two and one-half hours spent at the table there was certainly "the feast of reason and the flow of soul." After the supper the party adjourned to the parlors where toasts were read and responded to. The *menu* presented by Landlord Ryan was one of his best and all were highly pleased with the accommodations and service obtained at his house.

The College Shakespearian club held their annual re-union last evening in their club room. The members and guests assembled after the prize speaking and an hour was spent in social converse, after which about thirty-five sat down to partake of the supper which had been provided. The toasts were aptly chosen and replied to with wit and humor, eliciting much amusement. These were interspersed with music by the club quartette. Among those present were: C. L. Howe '87, F. H. Fowler '87, J. M. Marsh '87, E. W. Allen '85, J. B. Lindsey '83, F. B. Carpenter '87, J. E. Goldthwait '85. The event passed off very pleasantly and will keep fresh in the minds of all present the memory of their former college days.

The Graduating exercises commenced at 10 o'clock, this morning. The seven speakers appointed by the Faculty, were as follows:

Frederick K. Brooks, "A Defence of Agriculture;" Jonathan E. Holt, "Pauperism;" Frank F. Noyes, "The Military Resources of the United States;" B. Luther Shimer, "The Value of an Agricultural Education to the Farmer;" Fred S. Cooley, "Success;" Yataro Mishima, "Justice for Japan;" Robert B. Moore, "The Farmer and the State." The diplomas of the College were conferred by the Governor, the Military and the Boston University diplomas by President Goodell, as Dean of the Agricultural Dept. of the University.

We much regret the fact that we were unable to get a complete list of the prizes in time for publication.

The class of '76 held its reunion at Wood's hotel last night.

'75 has its reunion to-day and '82 to-night.

Q. T. V. CONVENTION.

The eleventh annual Convention of the Q. T. V. Fraternity was held at the rooms of the Keystone Chapter at State College, Penn., on Friday and Saturday, May 18 and 19.

The Chapters were represented by the following delegates: Amherst, J. R. Blair, '89; Orono, J. W. Hatch, '88 and E. E. Greenwood, '89; Granite, J. W. Smith, '88; Keystone, J. P. Jackson, '88, F. L. Morris, '89, J. C. Mock, '90, and Worcester by C. F. Treadway, '88.

On Friday evening the visiting delegates were honored with a banquet at State College hotel, at which all members of the Keystone Chapter, together with several of its alumni, were present.

On the Monday following, the delegates started home to their respective colleges, well satisfied with the work accomplished.

The nineteenth annual reunion of the Amherst Chapter of the Q. T. V. Fraternity was held at the Chapter rooms in North College last evening. Many of its alumni were present. The evening passed pleasantly and will be remembered by all.

FRESHMAN NIGHT.

Freshman night has come and gone and the quondam Freshman now glories in the name of Sophomore. '91 men—with the exception of one or two, who will bear the characteristic traits throughout their entire course,—will no longer be subjected to the calumnious epithets always heaped on the members of the lowest class, but will have passed from the epoch of egregious egotism to that of cogent cogitation (?).

On Wednesday, June 13th, the last artillery drill of the week occurred, and the Freshmen began their preparations for Freshman night by foolishly removing one of the cannon to the armory, thinking the position invincible and that, consequently, there would be no need of guarding the piece. Every thing progressed favorably for them until Friday morning, when looking across the campus no cannon met their vision. Although they did not intend to use this gun, its absence looked suspicious and they feared the other might be gone also. They had trusted much to Junior acumen and Armory locks, but the unreliability of both was proven by subsequent investigation, as the confined cannon had accompanied its companion. The Freshmen were completely nonplussed, and '90 men said they spent the whole of Friday morning hunting for the wished-for cannon. Be this as it may, they were not entirely deprived of resources as was shown in the evening when the mortars spoke to good effect. At 10 o'clock the class met at "Frank's" where a fine supper was enjoyed—especially by Al. and Mike. On the way home Lieut. Sage was remembered. About 12 o'clock they arrived at the College buildings and proceeded to complete the exercises of the night. It was passed as all such nights are—in making as much noise as possible and having a good time generally. The Juniors were given ice cream and lemonade in room 2, So. C. There was but little sleeping done that night, and as soon as it was light enough the tennis courts were bought into use. All concerned seemed to enjoy themselves and we hope similar nights may be productive of as little damage.

NOTES OF THE NIGHT.

Whitcomb's witticisms furnished amusement for the crowd.

The burning of the effigy crowned with Stowe's "plug" was one of the features.

Lieut. would like to know what ailed Jimmy at nine o'clock, the next morning.

Fred furnished valuable assistance to '91 with his pair of horses.

Whitcomb thought "if another pound of powder was added to the charge, the report might be heard as far as No. C."

The arrival of Hartwell gave the Freshmen an increased amount of sand when they feared a rush from the Sophs.

Tutsy says that the base-ball game of the season was played at four o'clock, Saturday morning and that his catch of that high fly was worthy of Tommy himself.

OCCUPATIONS OF SENIOR CLASS.

E. H. Belden, No. Hatfield, civil engineer.

H. C. Bliss, with Bliss Bros., jewelry manufacturers, Attleboro.

F. K. Brooks, Haverhill.

F. S. Cooley, Sunderland, farmer.

E. H. Dickinson, No. Amherst, farmer.

S. H. Field, will have charge of the dairy department of Maplecroft farm, Forestville, Conn.

F. H. Foster will probably take a course of study at the Institute of Technology at Boston. Address, Andover.

A. I. Hayward will have charge of the agricultural and live stock experiments at the Maryland State Experiment Station.

J. E. Holt, Andover, farmer.

L. F. Kinney will act as Prof. Maynard's assistant at the Hatch Experiment Station, Amherst.

E. E. Knapp, chemist, State Experiment Station, Amherst.

R. B. Moore, chemist, State Experiment Station, Amherst.

Y. Mishima, will pursue his studies at Cornell University, Ithaca, N. Y.

G. E. Newman, Newbury.

F. F. Noyes, civil engineer, Medford.

W. A. Parsons, will have charge of the field and feeding experiments at the State Experiment Station.

F. Rice, farmer, Shrewsbury.

W. M. Shepardson, will have charge of the Plant House, under Prof. Maynard, Amherst.

B. L. Shimer, Redington, Penn.

THE CYCLE.

VOL. XI. MONDAY, JUNE 17, 1889. NO. 1.

PUBLISHED BY THE ALEPH CHAPTER OF THE Δ. Θ. Χ. FRATERNITY, MASS. AGRICULTURAL COLLEGE.

ORDER OF EXERCISES.

For the Nineteenth Graduating Anniversary, June 16, 17, 18 and 19, 1889.

SUNDAY, June 18.—Baccalaureate Sermon, by Rev. C. S. Walker, Ph. D., Professor of Mental Science, at 10-45 A. M.

Address before the Young Men's Christian Association, by President William F. Warren, LL. D., of Boston University.

MONDAY, June 17.— Kendall Prize Speaking of Freshman and Sophomore classes, at 8 P. M.

TUESDAY, June 18.—Grinnell Prize Examination of Senior Class, in Agricultural Hall, at 10 A. M. and 2 P. M.

Alumni Meeting, at 1-30 P. M.

Military Drill, at 4-30 P. M.

President's Reception, at 8 P. M.

WEDNESDAY, June 19.— Graduating Exercises, at 10 A. M.

ANOTHER year in the history of the College has gone by, and once more have we the opportunity of presenting the CYCLE to our friends. The year now closing has, in some respects, been an eventful one, at least to the students. The large class entering at the commencement of the College year, was gladly welcomed by the upper classmen, and from it much was expected, and in some respects our expectations have been fulfilled. In sports they have, as a rule, taken a gratifying interest, and much may be done by them in this line in the future, will it but continue. We have been especially well favored (?) the past year, in the matter of holidays, and recreation days, and it would have perhaps been better if we had not had so many, as they seem to exert an influence upon the student's intellectual capacity, which it takes several days to throw off. The work in the various departments, has in general, been carried on in a very satisfactory manner, and it is gratifying to note the interest which has been shown by all. Our new Professor of Agriculture was duly installed in the Chair, and has proved to all who have had any connection with him, that he is eminently fitted for the position. A system of practical agriculture has been instituted for the benefit of the Sophomore class, which is mentioned elsewhere, and this in connection with class-room instruction, will undoubtedly prove beneficial to those who strive to get the most good out of it. The improvements in the farm buildings and land, have been continued during the present year, and as better facilities are offered they may be expected to be pushed more rapidly. The Military Department has been enabled to carry on its work to a greater advantage, especially during the winter months, owing to improvements in the interior of the Drill Hall, and the introduction of heating apparatus. One of the cannon was also placed in it, giving an opportunity for Artillery drill, which is needed, in order to acquaint the lower classmen with its principles, and more thoroughly prepare them for the out-of-door work of spring. The College Library, which is more and more becoming an aid to the student in his work, has been considerably increased during the past year, both by gift and purchase, and now numbers about eighty-three hundred volumes. The Hatch Experiment Department is also pushing its investigations, as rapidly as its accommodations will permit, and sending the results of its work to the public. Improvements have also been made in the various College buildings, and fire escapes have been placed upon the dormitories, for the assurance of those who live daily in dread of a conflagration. And now, with these few remarks upon the College in general, we

would thank our friends for their interest in the past, hoping that it may continue for years to come.

During the past year the lines of investigation of the Massachusetts State Experiment Station have been lengthened, and its facilities for doing work greatly increased. The management of the new fertilizer regulations has been placed in charge of the Director of the Station, thus giving him greater power in the matter. A "Department of Vegetable Physiology" has also been established, for the purpose of making investigations of those diseases of plants, which, although comparatively common are not as yet thoroughly understood, and a building is in process of erection, which will be used by Prof. Humphrey, who has charge of this work. in his researches. The farm buildings have also been enlarged for the purpose of carrying on more extended feeding experiments. In addition, the Board of Control has agreed to carry on the chemical work required by the various departments of the Hatch Experiment Station, of the Massachusetts Agricultural College. The details of the work of the Station may be found in the "Sixth Annual Report of the Board of Control," for 1888, which should be in the possession of every farmer, who is interested in work carried on for his benefit. It contains the results of feeding experiments with milch cows and swine, which have been carried on for several years past, with a view to determine the action and value of various grain and fodder articles, in the production of milk and flesh; the results of the field experiments. with an article by Prof. J. E. Humphrey, on the "Potato Scab;" and the analyses of various fodder articles, fertilizers, and fertilizing materials, which have been carried on during the year, in the laboratory of the Station. There are also tabulated results of water analyses, etc., and the meteorological observations made during the year. All of this material taken together furnishes food for a large amount of study and reflection.

The "Twenty-sixth Annual Report of the Massachusetts Agricultural College," is well worthy the consideration of each and every friend of the College, as in its pages may be found much information regarding the workings of the institution, during the past year, alterations and improvements which the premises have undergone, a list of gifts to the College, etc., and, in addition, the history of the Hatch Experiment Station is outlined. It also contains reports from the heads of the various departments, a list of officers and students, and other matter in relation to College methods. In addition, there is appended a paper on "Tuberculosis," by Prof. C. H. Fernald, and one on "Roads," by Prof. C. D. Warner. The former paper is prepared with a view to throw all the light possible upon this strangely destructive disease, which, attacking so many of our domestic animals, seems at present to defy man's skill, and is worthy the consideration of all. The latter paper contains, in a somewhat compact form, many facts in relation to the building and management of roads, and will repay anyone who will carefully read it.

If agricultural fairs can be looked upon as giving honest exhibitions of the productiveness of the sections of country surrounding the places where such gatherings are held, then the students of M. A. C. have during the past year, had abundant opportunity for judging of the agriculture of Massachusetts, and even of other sections of the United States. The first "opportunity" came at the time of the "Annual Fair" of the Hampshire Agricultural Society, held in town Sept. 20th and 22d, 1888, which the students were invited to attend, tickets of admission being given them, good for the first day, and College exercises being suspended in the P. M. Quite a number availed themselves of the privilege, although the weather at the time was not of the best. On Tuesday, the 2d of October, a "squad" from the Battalion visited the pleasant village of Belchertown, being attracted hither by the offer of the local agricultural society,—apparently too strong to be resisted,—and gave an exhibition drill for the benefit of the assembled multitude, which was well received, although the cadets labored under the disadvantage of stormy weather. All who participated voted the trip a success, and seemed well pleased with the treatment received, especially so, with the manner in which the wants of the inner man were met, by the ladies of the vicinity. But perhaps the trip which

was most enjoyed by *all*, was that taken at the time of the Fair of the Bay State Agricultural Society, held in Springfield, from Oct. 4–11. The days decided upon for the visit of the College being the 8th and 9th, on the morning of the 8th the Battalion was formed on the Campus, tickets and passes were distributed, and the line of march for the depot of the Mass. Central R. R. was taken up. Here, in due time, the cars were "boarded," and Northampton soon reached. It being necessary to wait here for some time, various places of interest in the city were visited, and "Aggie" uniforms might have been seen going in various directions. But as the time for departure approached, "stragglers" began to come in, and soon all were aboard the train, and on the way to Springfield, which was reached in due season. The Battalion was again formed, and marched to Hampden Park,—in which the Fair was held,—when the guns were stacked, and the Cadets dismissed, with the freedom of the Park. The equipments, however, were left in the charge of sentinels, who were relieved from time to time by others, so that all had abundant opportunity to investigate the features of the various exhibits. The sight-seeing continued until about 2 P. M., when the Battalion was formed, and gave an exhibition drill before the Governor and Staff, and a large number of spectators, amidst quite a violent snow-squall, accompanied with a very chilly wind, which made life very unpleasant for a short time. The Battalion drill was followed by a short Sabre exercise, after which the Cadets were once more set at liberty, and relieved from further duty. The rest of the afternoon was pent in the Park, Hall, or at various other points of interest in the city. A number of the students returned to Amherst that afternoon, but many more availed themselves of the opportunity of staying over until the next, before so doing, getting time to investigate more closely the various features presented by the different departments of the Fair. Would time and space permit, we might give some description of the various things of interest seen in connection with the Fair, but let it suffice to say that all were much pleased with the journey, and voted it a success, for much of an instructive character was seen, representative of the agriculture of various sections of our country.

On Friday, May 10th, the annual inspection of the grounds and buildings of M. A. C. by the Legislative Committees occurred. The gentlemen arrived in town on the evening of the 9th, and were tendered a reception by President Goodell. They made their head-quarters at the Amherst House. from which, in the morning, most of them repaired to the grounds of the institution, over which they are ever supposed to keep watchful eyes, and attended the regular chapel exercises. At their close, the educational and other advantages of the College were placed at their disposal by the President, and under his direction, and that of the various other members of the Faculty, they commenced their tour of inspection. The collection of Japanese agricultural implements, which had but recently arrived and been placed in position in the agricultural Museum, first occupied their attention; the Natural History Museum, and the Meteorological instruments also attracted some attention. When all these things had been inspected, an opportunity was given all who desired, of accompanying the Lieutenant in his weekly inspection of the Cadets' quarters, and some availed themselves of this chance to see the conditions under which the students live. Following this the drum was sounded, and after a short interval, the Battalion was formed, and a dress parade and drill followed for the benefit of the visitors, and in which they appeared to be considerably interested, particularly so in the work of the Artillery detachments, although the weather was excessively hot. The round of the buildings was again taken up, the Library and Drill Hall being visited on the way to the Barn, and it is hoped that the need of better gymnasium accommodations was impressed upon the minds of the party, at the sight of the *nucleus* which may now be seen in the Drill Hall, as the result of considerable hard work on the part of the management of the Athletic Association. The equipment of the Farm was next carefully looked into,—and here let us hope they saw need of improvements,—and then the teams were brought into use, and the party repaired to the grounds of the State Experiment Station, where they were given an insight into the work which is being carried on in both field and Laboratory under Dr. Goessmann's direction, for the benefit and enlightenment of the farm-

ers of the state. When they had noted all points of interest here, they were taken to the grounds of the Horticultural Department, and here also found many things of interest, in connection with the regular work of the Department, and also that which is being carried out under the Hatch Experiment Station. From here the party went back to town, and left for Boston in the P. M., however taking time to visit some points of interest in connection with Amherst College. It was reported that they were well pleased with the appearance and surroundings of M. A. C. and it is needless to say that it is the wish and desire of friends of the institution that a liberal policy may be adopted toward it in the future.

Among the many changes introduced during the past year, that in the manner of selecting the Kendall Prize Speakers should be noted. Hitherto anyone wishing to enter into the Prize Speaking could take part in a competitive speaking before the Faculty, and the speakers were chosen from those thus competing. This method has been very unsatisfactory, as there being nothing obligatory about it many of the best speakers, for various reasons, refused to engage in the trial. Early in the fall term it was announced that hereafter the Professor of Elocution would select the nine best speakers in both the Freshman and Sophomore classes, and that these would be compelled to speak before the various members of the Faculty, who would decide the matter. The beneficial effect of this course was very apparent. Not only were some who would have done so obliged to speak but a much greater general interest in the competition was aroused. Those who would not have spoken from choice felt that if they must speak they would endeavor to make the best possible appearance. The result was that the contests this year were more interesting and exciting than ever before. Hereafter there will be no reason to complain that the best speakers do not take part in the Prize Speaking.

AGRICULTURAL EXPERIMENT STATIONS.

The liberality of the United States Government in appropriating money to the different states for the purpose of conducting experiments to benefit the science and practice of agriculture has met with much commendation. Scarcely any other scientific enterprise undertaken by the Government has impressed its value so speedily as this. The wealth and prosperity of a nation has, from ancient times, been closely identified with the condition of its agriculture. At this time it seems fitting that there should be increased interest taken in agriculture. It has been said that in education lies the upbuilding of our agricultural interests. A graduate of our College (M. A. C.) is quoted thus:—"Agriculture is a great calling. The coming American farmer must needs be a broad, well-educated, brainy man." To supplement the Morrill Land Grant Act of 1862 the Hatch Act was passed. The former established our Agricultural Colleges, which for over twenty years have been training farmers' sons and others for the duties of active farm life, or as teachers and workers in agricultural science. The latter supplements this work by giving facilities for the establishment of new scientific truths and showing by example the application of these and truths long ago established to the many and diversified problems presented in every day life on the farm. Over three hundred and seventy persons are connected with the forty-six Agricultural Experiment Stations now in working condition.

The work of the Stations has generally been divided into the following lines or departments:—agriculture, horticulture, chemistry, botany, entomology and veterinary. The bulletins and reports issued by the Stations show that the work attempted covers a wide range of topics. In each state it has mainly been confined to problems of special interest to that locality, believing, no doubt, that at first it was wise to apply to the art what science has already established, before attempting to solve new scientific truths. Several Stations have, however, commenced upon the latter, which at once gives their work a more lasting and valued interest.

What might be termed a central Station or bureau, has been established at the Department of Agriculture in Washington. Here "it is proposed to collate the results of Station work bearing upon special topics, and the teachings of other research, and put the whole into brief, clean, practical form for farmers to read." It is also intended to keep

as close intercommunication between Stations as possible, and aid them in obtaining more abstract scientific matters.

The monthly journal *Agricultural Science* is the only one published in the English language which in any way gives abstracts or resumé of the work done in various localities. A publication is needed that will do for the American Stations, what *Die Landwirthschaftlichen Versuchs–Stationen* or *Central Blatt der Agrikulturchemie* does for German ones. The material already accumulated is large and with abstracts of this at hand, experimental research in the future will be greatly aided.

In writing in regard the auspicious time in which this undertaking has been commenced, Norman J. Coleman then Secretary of Agriculture, quotes:—"In modern Europe science and practice have allied themselves in the elevation of agriculture, fertility has been restored to the land and the national welfare provided for. We are repairing the same evil in the older states of our East and South, taking steps to prevent it in our younger States and Territories of the Mississippi Valley and Pacific Slope, and even developing into wonderful productivity millions of acres of what was once known as the Great American Desert. To this still youthful nation is reserved the opportunity not only to forestall the exhaustion of its soil, but also to make a 'wilderness blossom as the rose.' It is for these things that we are calling to our aid the teachings of the best science and experience of the world."

"In the history of no nation before has there been such a thirst for knowledge on the part of the great masses of the people, such high and just appreciation of its value, and such wide-reaching, successful, and popular schemes for self-education; no other nation has so large a body of farmers of high intelligence, never before has the great agricultural public been so willing, and, indeed, so anxious, to receive with respect, and use with intelligence, the information which science offers; never before has science so much to give."

W. H. C.

INFLUENCES OF NEW ENGLAND AGRICULTURE.

As from our fertile New England farms have been produced those articles necessary to the welfare of mankind, so also from these same farms have come those sturdy and stalwart men, who, having been called from the plough, have been placed in positions of honor, trust, and responsibility in our crowded cities.

It is such men as these, who, by earnest and united efforts, established this Commonwealth upon its firm basis, and who, adopting the sentiments of their Puritan ancestors, endeavored to establish a Commonwealth, in which righteousness, peace and temperance should prevail,in which the principles of liberty and freedom should be carried out towards each and every citizen who may desire such benefits, and in which the strong arm of justice should be stretched forth against such as might encroach upon the rights of their fellow men.

According to the theory of that ancient school of economists in France, known as the Physiocrats, which regarded land as the source of all wealth, as from it are produced those articles necessary to the successful operations of manufacturing, and other industries, we may consider Agriculture as the nursery of all the other professions, because from the farms have come many, who have exerted such an important influence in the various trades and professions.

But what elements in the life and surroundings of our farmers, are especially conducive to the healthy development of all those moral, intellectual, and physical characteristics, for which men reared on farms have been noted?

The pursuit of agriculture tends to develop a man's moral sentiments, for upon the farm he is ever in contact with the works of Nature, and from her works a spirit of morality may be imbibed. The farmer's son is free from many of the dangers and temptations which surround those living in cities, and more crowded districts, destructive alike to moral, intellectual, and physical manhood. He also has abundant opportunity for the development of all his nobler qualities, will he but make an earnest effort for the accomplishment of such an end.

The time has come when it is, or should be, everywhere recognized that simply a knowledge of some of the principal mechanical operations is not sufficient for pursuing the calling of a farmer, for to the success of persons engaged in agriculture, educa-

tion and intelligence are as necessary as in any other business. It is only when the farmer awakes to his interests, that his business yields more than a mere livelihood, and even then, only by a careful survey of the means at his command, and a judicious selection of those articles which he intends to produce, can he hope to compete with producers in other sections, whose resources may be more varied and extensive.

He should, further, interest himself in scientific researches going on around him, endeavoring, so far as possible, to become familiar with the principles discovered, and to apply them to the best advantage, and thus call into action his perseverance and judgment. elements upon which success largely depends.

To the successful pursuit of Agriculture, good bodily health and vigor are essential, if not absolutely indispensible, and it is undoubtedly an occupation in which the vital energy and functions are more fully developed than in any other. The agriculturist is ever exercising in the pure, sweet and life-giving air, and thus acquires the power to resist more effectually, those sudden and severe changes, characteristic of our New England weather, which often prove fatal to men of sedentary life.

Can we not also affirm that the pursuit of Agriculture has an influence for good in the development of a man's religious sentiments? The spirit of those God-fearing men who endured the privations and hardships of an almost unknown country, that they might found for themselves a place where God could be worshiped as the bountiful giver of "every good and perfect gift," has not been transmitted in vain to their descendants. The Puritans were, of necessity, tillers of the soil and from it they obtained at times only a scanty subsistence, yet they were ever mindful of the Creator's help and goodness to them. Have not the agriculturists of to-day, amidst all the comforts and blessings of life, much more to be thankful for?

The farmer's life also promotes a spirit of freedom and independence expressed in the principles of good government, which he should ever value highly, for a stable and economical government is always necessary to his success.

The elements found in the farmer's life and surroundings, combined with a liberal education, enable men to undertake those duties which everywhere devolve upon men of ability.

But some may say:—"Give men these advantages of education and training, and they will forsake the farms, taking up some business, which to them offers greater advantages." To a certain extent this may be true, but do not these same men originate and give to the farmer the labor-saving machinery and appliances, which lighten and simplify his mode of operations? Is it not likewise true that these are the men who are ever striving for the adpotion of measures, for the advancement of the farming class? May not Secretary Rusk, a graduate of a Wisconsin farm, do as much for Agriculture. in the Cabinet of President Harrison, as he could have done, had he remained on the old homestead? Furthermore, many of these same farm-bred men, while spending the more active portion of their lives in the tumult and noise of the cities, are looking forward to the time when they shall be enabled to go back to the old homesteads, where they first saw the light, and spend their declining years in the peace and quiet of rural life.

We have thus briefly alluded to some of the influences exerted upon the agricultural class by their daily life and surroundings, tending to promote health and intelligence and to develop moral and religious sentiments, in short, all of those elements which constitute manhood, and have found that, through the individual, they are brought to bear in the state and national welfare.

Washington once said:—"A skillful agriculture will constitute one of the mightiest bulwarks of which civil liberty can boast." These words although uttered in the earlier part of our national prosperity, have been fulfilled in years which have since elapsed, and to-day it should be everywhere recognized, that only by the ennobling of the agricultural class of New England, and all other sections of our vast country, can we hope to elevate the state and exalt the nation.

INJUSTICE TO STUDENTS.

Leisure moments lately have been occupied in attempting to analyze the word student to see if we can discover the reason why so short and simple a word conveys such injurious impressions to the minds of most people. A student, here and else-

where, is a by-word for everything that is depraved or sinful. Now can it be possible that such an impression is correct? If students are so depraved it appears strange that the men who hold the highest positions of trust and responsibility in the country, are those who have been college men and consequently, students.

The natural consequence of depraved persons holding such positions would be to create an injurious state of affairs all over the country, yet public matters do not seem to be in any such condition.

The period of a young man's life, when he is a student is the time in which the character of his life is going to be formed by the good or bad influences with which he is surrounded. The question thus arises as to what influences are being brought to bear on the students of this College. Although the word "student" means strictly "one who studies" yet it must not be expected that a student is going to spend his whole time in study. It would not be wise for him, mentally or physically Now there are various relaxations in which he will wish to engage. One of these is sports and another in some form of society.

There is a proverb, "man was not made to live alone," and no one considers this more true than does the student. He naturally feels a desire for social entertainment as a diversion after hard mental work, and the character of the society into which he is led by opportunity is going to have great influence on his future habits. Fellows enter College here, and in a very short time discover that they find no welcome in such society as exists in the town; and why is it so? Merely because they are students. Of course, students are at the age when they are particularly fond of ladies' society. If a fellow is wealthy, he may not find it so difficult to make lady friends, but with the fellows of moderate circumstances, to which class the greater number of us belong, such an attempt is well-nigh impossible. So there remains to them nothing but a choice of two courses. Either they will seek the society of young ladies of a rather lower class, in which case, at best, very little good is received on either side, or they will become mere hermits, spending their time in loafing or sleeping, except when engaged in study.

But see how we are considered here. If we are seen down town in the evening, we are considered as trying to "catch on," if we go to Northampton, it is, of course, for no good purpose; if we sing a College song on the street, we are nothing but rowdies, and so on, *ad infinitum*. How often we are refused some innocent request with the cutting remark, "remember that you are a student." Most of the mothers seem to consider that if a young man who desires to call on their daughters is a student, it a sufficient reason for shutting the door in his face. Yet these very young men who are so dreaded here as students, are perhaps, at their homes, considered, with reason, among the model young men of the town

A member of the Faculty even appears, judging by the morning exhortations he delivers to us, to consider us no better than fools and villains. As in every assemblage of people there are some of sinful tendency, so in a large number of students there will be a few who are naturally bad. Yet in reality, this is no more the case with a number of students than with an equal number of other people. It is said that even the devil is not so black as he is painted, and following that line of thought, we students feel it is most unjust to be so severely condemned as a whole, merely because there may be some black sheep among us.

INFLUENCE OF COLLEGE LIFE.

The human mind is created and placed in this world for the preparation of a higher existence and it is our duty, as far as lies in our power, to develop the talents which have been entrusted to us.

Of our institutions of discipline and culture, the college stands out prominent before us, the direct purpose of which is to bring about an intellectual and moral development in the minds of its members both with the instruction given by the Professor and with the students individual study. The work of the former is to inspire the student to study, to give him the incentive to gain information for himself, and in general, to give such instruction as will tend to develop and fit the mind for service in after life. We sometimes hear the complaint made that the substance of what is contained in the Professors' lectures can all be found in books, when this is true

the information is, as a rule, found in a form that would be of little avail to the student, even if he should attempt to seek it for himself. The Professor gathers his facts and presents them in the most effective form. The aim should be to learn general principles, rather than attempt to fill the mind with details: for the most successful man is not he who has the most knowledge stored up, but he who has the best trained intellect.

The recent college graduate, in taking retrospect of the four years' course, while giving due importance to the work of the Professor, sees in clearer light the great and lasting work which has been accomplished in him by influences beyond the class-room. Of these I wish especially to speak.

The habits one forms while in college will accompany him through life, hence the importance of their being in the right direction. For even if one completely changes his habits after leaving, his class mates will always judge him by what he was while in college, so strong are the opinions which students form of each other. These habits are formed largely by the influences brought to bear upon the man; they may be either in a good or bad direction as the student selects.

When the youth enters college he commences to make acquaintances, and continues to make them through his entire course; from among these he selects his intimate companions, and his success in college, at least, depends upon who these companions are. If those of one set are chosen there will be a tendency toward high morality and the forming of habits of industry, while on the other hand if those of another class are selected, habits of laziness and neglect are sure to follow, with a tendency towards lowering the moral condition.

The general environment of the college, the association of fellow-students, in the class, in the fraternity, in literary, athletic, and other voluntary organizations are most potent factors in the evolution of the individual.

The relative magnitude of these classes are governed, to a certain extent, by the location of the institution. If it be situated in or near a city there is a natural inclination toward corruption, far greater than when the college is isolated in a quiet town, but this isolation prevents the student from enjoying social advadtages, much to his chagrin when brought in contact with those who have not been thus deprived.

We sometimes hear the statement made that college life is a lazy one, of some, this may be said with justice, yet with those who do their work faithfully it is an exceedingly busy life. The amount the student does lies chiefly with himself; for the freedom that is allowed removes restraint so that whatever is in the man comes out.

In college, men are brought into a peculiar mutual relationship a relationship that can be found nowhere else. Here the student measures his own attainments by those of others around him. He goes among men of different views and opinions. And it is this coming in contact with men exhibiting all phases of character and modes of thinking that is so characteristic of a college life.

This association is promoted in various ways. Between classmates there exists a relation which can be understood and appreciated only by those who have passed through a college course. Entering, as classmates do upon an equal footing and pursuing their studies under the same conditions, it would seem as if they should become alike; on the contrary class training promotes individuality and develops differences; while college fraternities bring the students into a family-like relationship. The members working for mutual improvement and enjoyment, literary culture and manly character, exert a wholesome stimulus in the student. Literary culture, received either through the fraternity or debating club, is of the greatest value, as it aids in giving power of expression, the ability to convey one's thoughts to others. It is generally conceded that athletics are essential to a college curriculum. when conducted with moderation they give a man needed physical development, and a healthy body is essential to a healthy mind.

Thrown as the student is upon his own resources, away from home and its influences, the personality of the man is brought out, self-reliance and courage is developed. And with the four years of training with his fellow-students under his instructors, the man should be fitted to fill a position of responsibility, to hold such a station as the world offers to well educated men.

THE WAY THEY KISS.

The Florence girl bows her stately head
And fixes her stylish lips
In a firm, hard way, and lets them go
In spasmodic little sips.

The Northfield girl removeth her specs
And freezeth her face with a smile,
And she sticks out her lips like an open book
And cheweth her gum meanwhile.

The South Hadley girl says never a word,
And you'd think she was rather tame,
With her practical view of the matter in hand,
But she gets there, just the same.

The Northampton girl, the pride of the world,
In her clinging and soulful way,
Absorbs it all in a yearnful yearn,
As big as a bale of hay.

The North Amherst girl gets a grip on herself,
As she carefully takes off her hat;
Then she grabs up the prize in a frenzied way,
Like a terrier shaking a rat

The South Deerfield girl, so gentle and sweet,
Lets her lips meet the coming kiss
With a rapturous warmth, and the youthful soul
Floats away on a sea of bliss.

We have sung you a song of the girls who kiss,
And it sets one's brain in a whirl—
But to reach the height of earthly bliss
You must kiss an Amherst girl.

With your arm 'round her waist, her face upturned,
In a sweet, confiding way,
You care not a cent for the whole wide world,
Though the wind through your whiskers play:

And closer together your lips you draw,
Till they meet in a rapturous glow,
And the small boy, hidden behind the fence,
Cries, "Gallagher, let her go!"

HATCH EXPERIMENT STATION.

The work of the various departments of the Hatch Experiment Station, of the Massachusetts Agricultural College, has been carried on something as follows, under the supervision of the various officers:

During the past spring, the Agricultural Department has been carrying on a series of experiments with calves, for the purpose of determining the comparative value of rennet obtained under various conditions of the animal, when killed, as distance from time of feeding, and age, which will undoubtedly prove of interest to all engaged in cheese making.

At the commencement of the season, the *Agriculturist* sent circulars to the Presidents of the County Agricultural Societies of the state, inviting their interest and attention in a series of experiments with Indian corn, which he desired to make. In the different counties of the state, with the exception of Suffolk and the island counties, (Dukes and Nantucket,) an acre of land has been selected, from which fifteen plots, of one-twentieth of an acre each, have been laid off with paths between, furnished by the extra land. To some of these plots the three essential elements of plant food, potash, phosphoric acid and nitrogen have been applied in different combinations, with a view to determine, if possible, in which the various soils are lacking, by comparison with plots to which no fertilizer is added; and, also, the effect of these various elements upon plant growth.

This work is carried on generally under the auspices of the Agricultural Societies, but the plots will be viewed by the Professor of Agriculture, who has charge of this department, and his assistant, several times during the season, and one of them will be present at the time of harvesting of the crops.

By the continuance of these experiments for a number of years, it is hoped valuable results may be obtained.

A large amount of work has been carried on under the direction of Prof. Maynard in the Horticultural Department the past year.

Experiments have been conducted with a view to determine the value of substitutes for glass in the construction of hot-bed frames, and the comparative merit of different methods of protecting peach buds from injury during the severe cold of winter. Also to discover, if possible, some means of hastening the fruiting of trees growing under certain conditions, and the ripening of grapes, together with methods for protecting trees from the ravages of mice.

Quite extensive investigations have been conducted with a desire to determine the adaptation and value of new and standard varieties of fruits to our

section of the country, a large number of apples, pears, peaches, plums, cherries and grapes having been grown upon the College grounds for the purpose, during the past season.

Raspberries, blackberries, and strawberries have also been carefully tested, and the effect of different fertilizing ingredients upon the time of maturing of certain crops, was also made a basis of study.

The value of certain substances as remedies for plant diseases, and insecticides was further determined.

Somewhat elaborate experiments have also been conducted with the purpose of determining the relative value of steam and hot water in heating greenhouses, and also of different materials in the construction of such houses.

The material which has been collected furnishes a source for considerable study.

The investigations of the Entomological department have been continued steadily, since the organization of the station, in the careful study of many of our injurious insects.

The eggs or larvæ of these insects have been taken from plants which they frequent and carried through their various changes, under the supervision of Prof. Fernald, who has charge of this work.

Their habits have been carefully studied, with a view to determine, if possible, some means of dealing with them, when coming in large numbers, they may infest the crops of the farmer, and destroy his means of livelihood, and various substances have been tried as insecticides.

The department will soon have better facilities for carrying on the work, for an "Insectory" is now being completed which will be used in the researches as soon as possible, and experiments will be tried which before have been out of the question because of lack of accommodations.

The Meteorological department, by the purchase of a full set of self recording instruments, manufactured by Dr. Draper, of New York, after the same pattern as those used by him in the signal station in Central Park, has now the facilities for making accurate observations of meteorological phenomena.

These instruments, which have been placed in position in the tower of South College, in quarters expressly prepared for them, measure the amount of rainfall and snow, the direction, force and velocity of the wind, and the quantity and intensity of sunlight, and through a series of years will give results which will be of great practical value.

The results of work in the various departments, has been, and will be given to the public in the Station Bulletins, which will be sent free to persons interested in the work, who may desire them, upon application to Director of the Hatch Experiment Station.

THE GYMNASIUM.

As far back as the time when Rome and Athens were in their greatest glory, the benefits derived from thorough athletic training was appreciated. They possessed gymnasiums which are unexcelled even by those of the present day. Not only were they famous for their splendid gymnasiums but also for their excellence in all out-door sports. The importance of these sports, at the present day, is becoming more and more valued. Hardly a college of importance will now be found, where a first class gymnasium is not deemed one of its necessary equipments. This idea of gymnasiums originated with the older and wealthier colleges, but has rapidly been adopted by the smaller ones, so far as their means permit.

The lack of a gymnasium at our college has been occasioned, not so much from its benefits not being appreciated, as from the absence of means to equip and maintain one. During the past year, however, an effort has been made to overcome this difficulty, chiefly through the efforts of Lieut. Sage. It was decided to adapt the drill hall for use, as it was impossible to erect a new building. During the past summer it was sheathed and furnished with a Gurney hot water heater, thus rendering it comfortable in even the coldest weather.

Nearly two hundred and fifty dollars having been obtained by subscription, from the Faculty, students and others interested, the necessary steps were immediately taken to procure apparatus most needed for use. The ladder, horizontal bar, and parallel bars were transferred from the old gymnasium, as they were quite well adapted for further use.

A short description of the apparatus we have so far obtained, may be of interest. Along the western side of the building is a series of twelve traveling

rings, extending from the north to the south end, while near the centre are the flying rings, which give a very long easy swing. These rings are of great value in strengthening the arms, chest and loins. Near the entrance to the hall are two trapezes, which are, perhaps, the least used of any thing in the hall, on account of the greater danger in performing on them over that on the horizontal bar.

At the ends of the hall are the chest weights, back and loin weights and lifting machine. Without doubt, the chest weights are the most enjoyed of anything in the hall, from the great amount of solid exercise to be obtained from them in a short while. The President presented us with a very nice striking bag, also with an assorted set of Indian clubs, which have been placed in a rack on the western side of the building. While W. A. Macleod (M. A. C., '76), gave a lifting machine, which is very beneficial if not used to excess. We also have a good pair of jumping stands and two mattresses.

Thus we have obtained the nucleus for our gymnasium, but there are still many things needed to make it a first-class one. We hope that none of the friends of the college will hesitate to donate apparatus to us, from the idea that we have all we need. A set of dumb-bells, rowing machine and quarter circle would be most gratefully accepted.

Soon after the hall was equipped, our athletic association was formed, to have general oversight of the "gym." affairs. A president, secretary, treasurer and four directors were elected. Rules and regulations were adopted, and copies placed in the "gym." There is plenty of material in the fellows to render them good athletes, with proper training, and it is hoped that during the next year the gymnasium may be in such a condition as to warrant us giving some exhibition of athletics.

COLLEGE ATHLETICS.

It is probable that at no time has there been such a general interest in college athletics as there is at the present. The public has at last discovered that college athletics can furnish contests which are as interesting and exciting as those of professionals and which at the same time are free from the disgraceful features of drunkenness and crookedness which so often accompany professional contests.

There is no doubt that they are of great physical benefit to those taking part in them, for they are thus led to take more exercise than they otherwise would, and also to take better care of themselves and indulge less in dissipating pleasures. No man who values his own reputation or that of his college in athletics, will fail to keep himself in condition to do his best, whenever he is called upon to take part in any contest.

As for their effect upon scholarship, statistics carefully compiled by men who have had the best opportunities for so doing, show that at Yale and Harvard the average rank of the men on the University athletic teams greatly exceeds the general rank of the college. There is no reason to suppose that the same rule does not hold good in other institutions, and it would seem that athletics resulted rather in the improvement of scholarship than otherwise.

Although M. A. C. is prevented by her comparatively small number of undergraduates from making as great a reputation in athletics as many of the larger colleges, there is, nevertheless, a lively and growing interest manifested in them.

During the fall term, foot-ball was the principal sport and although our team was not as successful as we might wish, this was due more to causes completely beyond our control, than to any fault of those who played in the games. The arrangements for the gymnasium not being completed, the players were unable to avail themselves of it for exercise in preparation for the opening games, as it was at first hoped they might. Next fall the captain of the foot-ball team should require all those trying for positions on the eleven to go into training, to consist of work in the gymnasium and running each day immediately after the commencement of the term. It is to be hoped that some arrangement may be made by which a competent trainer can be secured, so as to put our team upon an equal footing with those with which it must contend. The need for such a step was shown in the games of the past season, where our opponents were enabled by their superior training to defeat us with ease, although their men were not superior to ours in any point, with perhaps, the exception of weight. The team was peculiarly unlucky in being deprived, through accidents, of the services of many of its best men. So much was this the case, that at the close of the

season men were playing upon the team who had never taken part in a foot-ball game before the commencement of that term. Another reason for failure, was the lack of interest in the success of the team and the indifferent support accorded it by the undergraduates in general. We do not refer to the financial support which was fairly generous, but to the difficulty with which men could be induced to come out and play on the second team. Very frequently the team was obliged to give up practice games, because there were not men enough on the campus to form a second eleven. In fact the general impression seemed to be, that if a man paid his subscription and growled at the team for not winning games, his entire duty was accomplished. Now all this is not as it should be, and it is greatly to be hoped that everyone will come back next fall determined to do all in his power to insure the success of our foot-ball team.

We have not quite given up hope that M. A. C. may some day become a member of a foot-ball league. It it could be arranged, sufficient financial support ought to be furnished to warrant it and such a step could not fail to lead to an increased interest in foot-ball.

Besides the games played by the college team there were the usual class games, some of which were very interesting and exciting.

Our team played against the following teams: Williston twice, Trinity, Amherst twice, Worcester Polytechnic Inst. and Yale '92,and were successful only against Williston, but in consideration of all the circumstances we feel that the team did fairly good work, and that the outlook for a good team next fall is at present very promising

As the old gym., which is the only place suitable for practicing polo was closed during the winter term, the idea of forming a polo team had to be abandoned.

There has been a decided improvement over last year in base-ball, the work of the team being much more satisfactory. In the early part of the winter term a trainer was secured,and those desiring positions on the team began practicing in the Drill Hall under his direction. But it soon became apparent that he was the only one who derived any benefit from the arrangement,and his services were discontinued about five weeks before the close of the term. This did not,however, prevent many from practicing faithfully, and to this is due much of that which is commendable in the showing of the team. Too much stress cannot be laid upon gymnasium work during the winter, as it is evident that without it no man can take the field in a condition to do his best in the earlier games. If the windows in the Drill Hall could be screened, it would be of great advantage to the team, as they could then practice batting during the winter. The need of such practice is very apparent as many runs were lost to us, through the inability of our men to hit the ball at opportune times. The improvement in team-work was marked, and the fear that they would add to their list of errors did not seem to be so continually before the eyes of the men as it had been in previous years. However, there was one feature of the team work for this season, which we cannot too severely condemn. About the middle of the term, the players seemed possessed with the idea that they could play well enough, and that it was of no use for them to practice. The result was that they lost a game under conditions peculiarly humiliating to us, and one which they should have won with ease. Now every man should remember that his fellow students have a right to expect him to do his best, and that it is only by constant practice that he can hope to do so. The new uniforms are as handsome as any we have seen of late, and the padding makes sliding for a base much less dangerous than it was with the old ones. In view of the fact that none of the members of the nine graduate this year, and it is probable that there will be several good men found in the class entering next fall, we can reasonably look forward to having a much better team next year than ever before.

The games played up to the present time have resulted as follows:

April 22, M. A. C. *vs.* Northampton High School. 28 to 1.
April 24, M. A. C. *vs.* Amherst '92. 17 to 3.
April 26, M. A. C. *vs.* Amherst '92. 8 to 0. [7 innings.]
April 30, Bay States *vs.* M. A. C. 17 to 0.
May 4, M. A. C. *vs.* Williston. 13 to 7.
May 18, Williston *vs.* M. A. C. 8 to 7.
May 24, M. A. C. *vs.* Whately. 18 to 5.
June 1, M. A. C. *vs.* Wesleyan Academy. 9 to 2. [6 innings].

Tennis was much played during the fall term, the four society courts being kept in almost constant use. A sort of tournament was inaugurated but like all such informal attempts it proved very unsatfactory. Toward the last of the term a Tennis Association was organized and it was expected that a tournament would be held in the spring, but the interest in tennis has fallen off so much that it appeared to be impracticable. This was due in a great degree to the fact that many of the tennis players are members of the base-ball team and so obliged to spend the greater part of their spare time in practicing base-ball. It seems to us that the early portion of the fall term would be the best time to hold a tournament, and it is to be hoped that some action will be taken in this direction, as tennis is a sport calculated to suit all, being exciting enough for the most venturous and safe enough for the most timid.

Field athletics have not received the attention which should have been given them in the past, and it is fully time that this were remedied. We should not only engage in contests with other colleges, but should endeavor to excite a rivalry in sports among our own men. With this end in view it would be well to have a Field-day and also now that we have a gymnasium, some sort of an indoor exhibition. In regard to the Field-day, the time has certainly come for some action to be taken. We have men who with proper training, should be able to make as good records in many events as have been made at other institutions. College sentiment is strongly in favor of some such thing and if the matter were mentioned in mass-meeting it is probable that some action would be taken in the matter.

A JUNIOR'S LAMENTATION

As we approach the last year of our course in an Agricultural College, the thought naturally arises as to what we have learned about agriculture that we did not know before we entered on our studies.

When, on graduation, we enter actively into the world, we will individually be looked on, particularly by those engaged in agricultural pursuits, as exemplifying the results of an Agricultural College education.

Now let us see what we have to show for our three years' work.

We entered college as Freshmen in the fall of 1886, and our agricultural course commenced with a marvellous little book, called "Talks About the Weather." This book, partially written by our professor, may have been the result of deep thought and study, but it seemed to most of us to be, if not the work of some mere school boy, at best adapted to give children of a primary school some such ideas as, "Which is the best side of the school house to lean against in order to keep warm?" There were, no doubt, many facts of value scattered through it, but it was surely a waste of time for students to spend a whole term on such a book, when they had but four short years in which to master the science of agriculture.

The subject for the winter term was farm bookkeeping. We spent the principal part of the term in making out an inventory of the property on the college farm, (which saved someone else the work), and in recording the few business transactions of the farm during the year. The system taught was one no practical farmer would think of using.

In the spring, we started on the history of agriculture with great minuteness of detail, but as we began with the day upon which Adam was created, examination time had come before we had descended as far as the present generation.

This closed our first year's work, and few of us could see what new knowledge we had acquired.

We now come to the fall term of our Sophomore year, and the subject for the term was soils. Well, we went out and collected samples of all the soils within reach, and they were roasted and stirred on a pan for the first month or so. On looking over my note book I find the greater part of the notes for the balance of the term were tables, in the preparation of which we received thorough instruction as to the number of lines and best method of ruling, but where those tables are going to be of use in practical agriculture, remains to be seen.

Our winter term began early in January, but we did not receive our first lecture until the 5th of February. The subject for the term was rotation of crops. It was entered into deeply, but so deeply that when the end of the term came, the only crops which had been treated of, to any extent, were corn and potatoes.

In the spring, under another instructor, we studied fertilizers, and on finishing the subject, each of us should have been able to say he had learned something of value.

Last fall we were engaged with agricultural implements, and though we may not have taken as many notes as in some previous terms, yet the subject was treated in a good practical way. The lectures in the last part of the term were on contagious diseases, and all were sorry that the subject could not be finished. We spent most of last term studying the relation of the atmosphere to plant growth, and so far this term the subject has been plant diseases. Now these subjects have a great scientific value, and if we had a ten years' course here, a great amount of time might be spent on them with profit; but there are more practical, important subjects connected with farming which we ought to master in the next year, than can be taught us in three years.

It looks very much as if our first two years of agricultural training had been nearly thrown away. Does it not seem that in an Agricultural College, the study of agriculture should take first place? Yet in the last two terms of our Junior year, we shall have had at most, but twenty-four lectures on agriculture out of a possible one hundred and twenty. Time has been found, however, for about one hundred and five lectures on English Literature, and ninety-five recitations in Physics during these same two terms. We might have had nearly six hundred lectures on agriculture during our three years while we shall have had less than three hundred and forty. It does not look as if the college ought to expect us to do much honor to her from an agricultural point of view.

If the object is to make us historians, philosophers, or physicists, it is another matter, but it does not appear that the college was established for that purpose.

While many of us do not wish such practical agriculture as the Sophomores are having, yet we who came here to get an agricultural education, feel that as we are expected, in future years, to be a credit to our college, the college ought to give us a more extended course, both in practical and scientific agriculture.

THE COLLEGE FARM.

Many improvements have been made upon the farm during the past year, and many more are now being made. The most striking among those on the land is seen in the work that has been done upon the pasture, in reclaiming quite a tract of it. The twenty-five acres that were planted last year to corn, oats and potatoes, were seeded to grass last fall, and now give promise of a good crop of hay. During the late summer and autumn some thirty acres were broken up, and some drains opened up through it. In the winter it was manured, and this spring most all of it has been planted; about three acres to potatoes and the rest to corn. Since the arrival of Professor Brooks, which was Jan. 1st, he has conducted this work, carrying out the plans already made regarding this improvement. This spring he has had an exact topographical survey made of the entire lot, and proposes to have a thorough system of drains put in, thereby bringing some of the best land upon the farm into a condition for the growing of any crop.

Besides the work that has been done in what was once the pasture, some seventeen acres of grassland have been plowed up on the lower side of the field, west of the college buildings; ten acres were planted to oats, four to stock beets, and three acres are used for the Sophomore's experimental plots. While the plowing of this excellent grass land will reduce somewhat the amount of hay produced, yet even as it is there is more area in grass than there was last year, for there are the twenty-five acres that was once in pasture.

While in the past the land has been kept up in fair condition, the farm buildings have been sadly neglected, and allowed to run down. But as the Legislature kindly appropriated for their improvement, Professor Brooks has immediately set to work making some of the needed changes, by first moving a shed over one hundred and twenty feet long, which shaded the cattle yard, making it unfit for use in winter. This shed was cut in two, and one-half placed adjoining the south-east corner of the main barn, to be used as a horse stable, and one end for an engine room. The stable has been fitted up with box stalls, harness room, etc., for the accommodation of the farm horses, of which there are seven, including the stallion and brood mares.

In the engine room is to be placed a boiler and engine, to be used for furnishing power to run an ensilage and feed cutter, hay press and other machinery. The boiler will furnish steam for steaming feed and heating water in the winter. The other half of the shed has been moved directly west; it will be used for the same purposes as formerly, that is, part for a sheep barn, and part for a tool-room. A cellar has been dug under it, with an entrance at the west end.

Besides these changes, a silo of 400 tons capacity will be placed in the east end of the barn and cellar. And by feeding ensilage the farm will be enabled to sell a larger amount of hay and at the same time keep as much stock as has been kept in the past.

The stock of the farm at present consists of 21 milch cows, 10 young cattle, 15 calves and 9 bulls of the different breeds. Ayrshires, Holsteins, Jerseys, Guernseys and Shorthorns are very well represented. The milk is set in a Cooley creamery, and the cream is taken by the Amherst creamery; the skim-milk being fed to the calves and swine. The flock of sheep consists of about 25 Southdown sheep and as many lambs. Quite a herd of small Yorkshire swine are also kept.

Additional equipments have been made in the shape of two elegant wagons for team work; they were built by Abbott, Downing & Co., of Concord, N. H.; also a sulky plow, and other small implements have been obtained.

Under the proficient management of Professor Brooks, we feel that in a short time the College farm will become what it should be, a model farm.

FRESHMEN EXPLOITS.

Would it be out of place, in a paper like this,
  Which has M. A. C.'s welfare in view,
To rehearse somewhat briefly the facts of the case,
  Involved in the pranks of ninety-two.

The routine of life had long troubled their minds,
  And made them more thoughtful than ever,
'Till they finally tried to engage in some strife.
  Which their friendly relations would sever.

So at last one dark night, when the storm raged without,
  And darkness held sway o'er the land,
From the Campus around, these Freshmen so bright,
  Assembled to show us their "sand."

To the Chapel they went, and commenced their dark deeds,
  Ne'er stopping, until they'd removed
From its shelter, and placed on the diamond bare,
  The settees, the desk, and Prof.'s seat.

When the morning light broke and revealed the strange sight,
  Some thought: "No 'Chapel' there'll be,"
But the Faculty, after noting their plight,
  Said: "Come to the New Chapel and see"

So here we assembled as the bell was rung,
  Each waiting the issue to see.
The apt Scripture was read, the "Doxology" sung,
  And prayer for "fools and their folly'" was heard.

Not content with rebuke (?), again at it they went,
  And the next night the desk was removed,
But a table was brought,—as if by forethought,—
  And "Chapel" continued as usual.

The very next night, some venturesome men,
  Who must have possessed plenty of courage (?),
'Midst the darkness of night, adorned, for our sight,
  Some prominent peaks of North College.

Not being yet tired of their midnight toils,
  They purloined an innocent calf.
And imprisoned it fast,—for a short time at least,—
  In the bath-rooms, far out of sight.

At last 'twas discovered, was hitched to a tree, but
  Breaking its bonds, was set free,
Became lost in its flight, being finally found,
  Safely hid away in the "Ravine."

With these exploits they ceased, and abandoned their ways,
  Although they'd not made much excitement,
But perhaps they have learned, from the talk of these days,
  That it's best not to get into trouble.

ATHLETICS IN CANADIAN COLLEGES.

We recognize the prominence of athletic sports in all of our colleges, both American and English. I will try and give my readers a description of college athletics across the line.

Football holds first place in popularity in Canadian colleges. As soon as the Fall term opens, in September, and things become settled and the Freshies initiated to college routine, football takes up the attention of the student. The game, as played by them, differs somewhat from the way it is played here. It takes fifteen men, distributed as follows: nine men on the rush-line, two quarter-backs, two half-backs and two full-backs, while the American game requires only eleven men. To

thoroughly train the men for football, the captain obliges those of his team to take up the English game of "Hare and Hounds." This is an old standing college recreation which has developed into a kind of athletic sport. Formerly the fun of a "paper chase" was to explore a new country, but now to give training to the men. While on the run no "hare" or "hounds" are expected to clear fences in the stride or jump; neither does the runner run on his toes, but runs flat-footed all of the time. Judgment of pace is most needed and can only be gained by experience. The most distressing part of a run is usually in the first part of it, when the first wind has gone and the second has not come. The "scent" is paper torn in small pieces and strewn by the "hares" as they go, it being carried in canvas bags, and to insure a pace one of the two hares can run a section on a curve, while the other cuts across and meets him and takes his turn in the same way. With these long runs of several miles, the man has the power of endurance necessary to play football. Besides these runs the captain also requires steady exercise, a fixed diet, and especially the keeping of early hours. In the "scrimmage" of the game the "rushers" do not line up as they do in the American game, but the ball is placed upon the ground by the "center-rush" and the other rushers flock around and push. The ball is not to be touched by the hands until it has been forced out by the feet, then the "quarter-back" can pick it up and run with it or pass it to a halfback. The Canadian game is not quite as rough as American, but more of a scientific game, not relying so much upon brute force.

When the hard frosts come they cease to play football, and owners begin to flood their rinks so that the cold nights will ice them over. These rinks are covered by a roof and the sides may be closed also. Skating is enjoyed by all and is too well known to need explanation. There is a game played in these rinks known as "hockey" which is very similar to "polo."

After the snow has come the merry jingle of sleigh bells may always be heard. Also see some snowshoe club starting off for a tramp, or perhaps it is a crowd of students started for a country tavern some ten miles away where they will have a lunch of coffee and bread, and maybe something stronger. It is always customary for the young ladies to accompany the student upon these tramps, which, of course, makes them far more enjoyable. However, it is a very exhilerating exercise for those of both sexes, and I assure you no consumptives are found among those young ladies who habitually indulge in this exercise.

Tobogganning is the next of the winter sports. While it is a very exciting one, it is so very dangerous that it becomes less popular from year to year. It is carried on the most extensively in Montreal, and it is extremely interesting to watch people slide down, especially to see them try it for the first time, for they are very reluctant about trying it. But after they are once seated and started they can do nothing but "hold on" and "let her go," and in less than no time they find themselves at the foot of the slide, ready for the walk back.

When the snow has all disappeared and the ground has become dry, the students take up the Canadian national game of lacrosse. This game is to Canada what cricket is to England and baseball to the United States. This game was played by the Indians before the discovery of the New World. As white men took up the game it has been gradually changed to what it now is. It is played with a *crosse* stick, which is a stick with one end curved, forming a hook, which is fitted with a net-work of cat gut. The game is played upon a level field with "goals" 100 or 120 yards apart, as may be agreed upon. Each goal is composed of two small flag posts six feet high and the same distance apart. It requires twelve men on each side to play the game, stationed similarly to the way they are in football. A game is scored by one side driving the ball through their opponents' goal, and a match consists of five goals, the side getting the most winning. The idea of the game is to catch the ball upon the net-work of the crosse stick, carry it as near as practicable and throw the ball through the goal, or he may pass it back to one of his side who will carry it. The ball must not be touched by the hands. After each goal the teams change sides. This game, besides being played in the colleges is also played elsewhere, there being lacrosse leagues similar to the baseball leagues here.

Besides these various sports every Canadian college has its field day sports in both the spring and

fall, and some very good records are sometimes made. In closing we would say that Canadian athletics in colleges compare very favorably with those of the colleges in this country.

SOPHOMORE EXPERIMETAL PLOT.

Ever since the first founding of an Agricultural College in the United States, the problem of how much manual labor the student shall be compelled to perform on the farm has been a question which has called forth a great deal of argument on both sides. In the early history of nearly all these colleges, we find the students were compelled to work on the farm, it being then supposed that labor was as essential to an agricultural education as chemistry or mathematics. While to-day there are a few of these colleges which still advertise "so many hours per week of practical work on the farm," yet in most of them, especially the older ones, the idea has been given up.

But this year Professor Brooks has proposed a new scheme for the students of this college, the practical value of which remains to be made apparent. The plan is this: The Sophomore class in their spring term, and fall term of their Junior year, are to carry on individual experiments on a one-sixth acre allotted to each. All have the privilege of selecting their own experiment. A plan containing the minutest details is to be made out during the winter term previous and handed to the Professor. In carrying out the experiments, each one is not only expected to keep a memorandum of all important observations, but also a strict profit and loss account. The farm prepares the land, provides all seed, and agrees to take all crops raised, paying market value for them. At the end of the year the profits made by all are to be put together, one-third of which goes as a prize to the one who has carried out his experiment the best, and the remaining two-thirds are to be divided among the whole class. Also a final report at the end of the year is to be made out, which shall contain the first report, all notes taken, and the final results of the experiment.

Before speaking of the advantages or disadvantages of this project, that has worked so well perhaps in some places, we wish to say that this is its first trial here, and as the experiments have but just got under way, the subject will have to be spoken of more from a theoretical point of view than from actual experience.

No doubt but what this is a good idea, but is it adapted to this place? The making out of the first plan, which shall contain the plan of the experiment, the quantity of seed used on each plot, kinds and amount of fertilizers to be used, and numerous other data, all of which gives the boys a chance to get many new thoughts which they might otherwise never have received in their course here. Each, in deciding what experiment he shall try, and in seeing those of the rest of the class, will not only gain knowledge from these alone, but he may be so enthused by them as to try many more when he comes to farm for himself. And when a farmer has learned to experiment for himself, he is then in a fair way to succeed. It has been stated that every field on a farm is an experiment, and so it can be made if the owner is educated enough to know what he wishes to experiment for. The keeping of a strict account will give the young agriculturist experience which may be of value to him afterwards, for no farmer can hope to succeed at the present day without a thorough system of accounts.

Also to those who have not worked on a farm, it offers them a great opportunity for learning how to perform the common farm work, as they will doubtless try much harder in taking care of their one-sixth of an acre than if they were obliged to work on the farm so many hours per week. But here is where the trouble comes for most. The making out of the plans, as has already been seen, takes but a very short time compared with the time it takes to carry them out in the field. Nearly all the students here have lived on a farm more or less, and especially those who ever expect in any way to be connected with practical agriculture. Now those who come here for agriculture come here to study the scientific principles which may underlie it, and not to receive manual training in order to become expert farm hands. They can all get enough of this elsewhere. We cannot afford to waste the time here that should be spent in getting the principles of scientific agriculture; and in obtaining an education which will fit us more intelligently to manage and plan farm operations, in learning how to hoe, mow, dig, and in short to learn things which most of us have already

learned, and in which we probably never shall excel any practical farm hand we may employ. Perhaps already many of us, having had entirely too much of this notion, that to become a farmer is little more than to become a skilled farm hand, come here with a decided sickness for the whole business. If this is the case, picking potato bugs, or hoeing corn will not help matters much. What a farmer's son wants is a school just as cheap as possible, where he can have good advantages for getting a thorough general education, and not be obliged to spend so much time in practice on that one branch at which he has toiled more or less all his life.

Now it seems to us that if but one hour per week was spent with the Professor in observing the numerous experiments that are being carried on around here, instead of the time now given to work on the plots, much more would be learned, not only in regard to the result of the experiments but also in the methods of carrying them out Though the State Experiment station, the Hatch experiments, and those on the farm are all close by, still the student really knows very little about them. Most of the boys have but little time to watch these experiments, and even if they do they can simply see the crops growing in the field, without knowing anything about the object of the experiment.

THE Q. T. V. CONVENTION.

The 11th annual convention of the Q. T. V. Fraternity was held with the members of the Worcester chapter, at the Young Men's Christian Association building, in Worcester, on Friday and Saturday, May 24 and 25. The following delegates were present, viz.: A. N. Stowe '90, A. H. Sawyer '91 and G. Everett Taylor '92, of the Amherst chapter, located at the Mass. Agr'l College; John Reed '89 E. F. Heath '90 and Geo. M. Pillsbury '90 of the Orono chapter, located at the Maine State College; F. P. Comings '83 and J. L. Norris '89 of the Granite chapter, located at the New Hampshire College of Agr'l.; and H. C. Stowe '89, F. W. Treadway '90, and C. H. Farnum '90, of the Worcester chapter, located at the Worcester Polytechnic Institute. Officers of the Grand Lodge that were present were J. W. Hatch '88, of the Orono chapter; J. R. Blair '89, of the Amherst chapter, and J. L. Norris '89 of the Granite chapter. The Boston Alumni chapter was represented by C. L. Flint, Jr. '81, of M. A. C.

By an unavoidable accident the Keystone chapter located at the Penn. State College, was not represented.

The members of the Worcester chapter had planned to entertain the visiting delegates by an excursion to Lake Quinsigamond, on Saturday afternoon, but owing to the vast amount of business to be transacted, and the limited time for doing the same, the project had to be abandoned. The meeting was adjourned late Saturday evening, the members being well satisfied with the amount of work accomplished.

THE COLLEGE LIBRARY.

The library should be the depository of everything pertaining to the college. Everything illustrating its history and life should be found on its shelves for reference. As years roll on, these records of the past increase in interest and value, but are harder to obtain. Now is the time to secure them. Graduates of the college, have you no papers, pamphlets or class histories you are willing to give for this purpose?

There is wanted to complete the college file, the CYCLE, for 1881, and the supplement for the same year; also a copy of all publications prior to the year 1879, except the *Register* of 1876, and the *Index*, of which a file has been obtained.

Who will give them?

PASSING EVENTS.

The D. G. K. society gave a very pleasant reception at the Amherst house, Wednesday evening, May 29.

The permanent library fund of the college received $500 from the estate of Henry Colt, of Pittsfield, Mass., who was for many years a trustee of the college.

During the coming summer a feeding stable will be erected near the boarding-house for the use of the Hatch Experiment Station. The feeding experiments are to be conducted by F. S. Cooley, assistant agriculturist.

This addition of two new professors will supply a long felt want and will greatly benefit the college. The veterinarian will not only teach veterinary science, but will also teach stock, hygiene and care of domestic animals. The professor in English will take some of the studies now taught by others, thus relieving them somewhat.

As the prospects are that there will be a large incoming class next fall, it is expected that every room in the dormitories will be occupied, for the trustees voted last spring to oblige every student to room in the dormitories unless they reside with parents or guardians. This law will oblige many who are now rooming outside to come into the college dormitories.

The foundation of an agricultural museum was laid in the presentation to the college by the trustees and J. C. Hammond of Northampton, of a set of Japanese agricultural implements. This collection is made up of what would seem to the farmers of our more advanced countries, rather primitive tools, and will repay one the time it will take to look them over. It is hoped that the nucleus thus made will be continually increased until we shall have what can truly be called an agricultural museum.

By the action of the legislature in appropriating $10,000 a year for four years, the facilities of the college are greatly increased. One-half of this is to be used in establishing a "Labor Fund," and the other half for two new professors. The establishment of the "Labor Fund," it is hoped, will draw more students to the college, as it will afford an opportunity for needy students to help pay their way through college. And besides, this work will greatly improve the condition of the college.

The new building for Prof. Fernald's use is now nearly completed and ready for occupancy. Funds for its erection were contributed by the Massachusetts Society for the Promotion of Agriculture, and by the state. The upright part is one and one-half stories high and 24x20 feet in area. Connecting with it at the end is a greenhouse, 30x18 feet, divided into a hot and cold room of equal size. The main building has three rooms, viz.: Prof. Fernald's office, on the left of the door in front, where the correspondence is to be carried on; the insecticide room, just back of the office, where numerous experiments as to the easiest, simplest and cheapest method of killing them, are to be conducted; the laboratory occupying all the right side. In the greenhouse are to be kept plants for use in the experiments.

A new departure in the music line was taken during the past winter, by having a course of singing schools, which were free to all members of the college, and were attended by a comparatively large number.

Classes were formed for both "beginners" and more advanced (?) pupils, and by the way the fellows took hold at the rehearsals, one would judge that they were all in earnest.

However, what benefit will the college derive from such instruction, if the singers are allowed to use their talent in other places? Why should we not have music in our Sabbath service, as well as in the regular morning exercise?

These are questions which are of particular interest to those who are obliged to attend the religious services at the college.

March 15th the Senior class, under the direction of Lieut. Sage, visited the workshops and other buildings of the United States arsenal at Springfield, and saw much of an interesting and instructive nature. The party left Amherst in the moring, going by way of the Massachusetts Central R. R. to Northampton, and from there to Springfield. Upon arriving at the latter place, they started at once for the armory grounds, and finished the inspection of the work shops, and museum before noon.

In the afternoon they visited the Water shops, where some of the details connected with the manufacture of the Springfield rifle and other weapons were explained to them.

The headquarters of the co-operative milk association, and Young Men's Christian Association were visited, together with other points of interest.

Taken as a whole, the trip was a success, and enjoyed by all who participated in it.

CYCLE SUPPLEMENT.

The Cycle Supplement will be issued as usual at the close of graduation exercises Wednesday morning. It will contain a complete account of Commencement exercises, the list of prizes, and other interesting matter. Do not fail to purchase a copy. Price two cents.

ALL AROUND THE CAMPUS.

Settees.

Baseball cranks.

Baseball, June 7th, '90—11 ; 91—12.

Freshmen hunting for *Buttercups*.

Baseball, April 17th, '91—3 ; 92—18.

Sophomores, farming for pleasure(?)

Baseball, June 5th, '90—11 ; '91—12.

Juniors chasing butterflies.

Y. Okaime, '89, graduates at Cornell.

Seniors waiting for their diplomas.

March 19, "Prex." and Prof. Brooks try to drive off without unhitching their horse.

Senior vacation commenced Saturday, June 8.

Several of the graduating class will work in the Experiment Stations.

Tuttle, seeing a Webster's dictionary, wished he'd read it before writing a composition on Daniel Webster.

F. W. Davis represented the Senior class at the graduating exercises of Boston University.

The taste of the occupants of North college has been considerably *freshened* during the past term in regard to roof decorations.

One of the Freshmen asked Prof. Brooks how much a *span* of oxen would cost.

Twelve of the Senior class matriculate with Boston University.

C. O. Lovell, '78, of Northampton, Mass., was class photographer this year.

The Junior class spent a considerable portion of their time, during drill hours in the fall and spring terms, in target practice.

Among other improvements desired by the students may be mentioned sidewalks, electric lights, better gymnasium accomodations, bath rooms, &c., &c.

Prof W— to "Mr. G—, what is a parachute?" G—. "I think it is something to pump water with.'

Eighty-nine planted her class tree on May 14th, with the customary amount of ceremony.

Prof. Warner, (in geometry,) to Homer W., '92, who has drawn some strange lines on the blackboard. "Those must be *homer*geneous lines, Mr. W."

Lieut. Sage's connection with the college ceases at the close of the present year. In leaving he will carry with him the best wishes of all who have been associated with him in the past four years.

Professor, (for benefit of Weed, who has been cutting up in class.) "If you gentlemen do not keep quiet, we shall have to do a little *weed*ing out."

Prof. C. H. Fernald sailed from New York June 12th, 1889, for Europe. He will visit the Paris Exposition, and other points of interest in connection with his entomological studies.

Prof. Walker,—(in Senior recitation in constitutional history.) "Mr. Woodbury may recite." (W. rises.) "What are the prerogatives of the President of the United States?" W—. "He should be fourteen years of age, and—" (applause) W— finally collects himself and continues.

On Friday afternoon, May 24th, the Juniors, accepted the invitation of Prof. Fernald, to look over his large and valuable collection of insects, and undoubtedly were inspired to greater vigilence in the pursuit of their entomological studies.

Prof. Brooks, (in Sophomore agriculture recitation.) "What have you noticed peculiar about the growth of the cotyledons of the bean, Mr. E—s?" E—s. "I have observed that they both come out of the ground, and then one on side one dies, and the other grows." Prof. B—. "That was rather of a *one-sided* observation."

Prof. W—, while lecturing to the Sophomore class on road making, in referring to the country *road surveyors*, taken as a class, said: "You might take the little end of nothing, sharpen it down to a point, with it punch the pith out of a horse hair, put the souls of some of these men into the cavity, and you could actually hear them rattle."

The new system of execution by means of the electric current was successfully tested on Saturday afternoon, April 20th. During a severe thunder and hail storm, lightning struck the rod on the barn; the current passing down into the cellar, instantly killed two pigs. No other damage was done, although several trees were struck on different parts of the farm.

Mr. James Cheeseman, secretary of the New England Creameries Association, lectured before the Senior and Junior classes, on Feb. 26th and 27th. On the afternoon of the 27th he delivered a lecture at an agricultural institute held in the chapel, on "Cooperative Dairying."

Those of the students who so desired had an opportunity to show their patriotism during the last election, and at the time of the Republican parade in town. On the evening of Nov. 13th, quite a large number of the cadets took part in the parade, and the field pieces were brought into service, and helped to swell the volume of noise to a considerable extent.

ALUMNI NOTES.

'71.

A. L. Bassett continues to be in the employ of the Central Vermont R. R. Co., as transfer agent at Pier 36, East River, New York city.

E. A. Ellsworth is architect for the new building at the State Experiment Station, to be used by Prof. J. E. Humphrey in making researches in vegetable physiology.

L. A. Nichols, Portland, Oregon, is a civil engineer in charge of railroad construction, O. R. & H. Co.

G. P. Strickland, 850 Courtland St., St. Paul, Minn., machinist, St. Paul, Minneapolis and Manitoba R. R.

'72.

B. C. Bell, San Francisco, Cal., druggist.

John W. Clark, formerly of North Hadley, is horticulturist at the Agricultural Experiment Station, of the University of Missouri, Columbia, Mo.

J. C. Cutter, M. D., is pursuing his studies in Germany.

Rev. R. B. Grover is associate pastor, Old South Church, Boston.

Professor S. T. Maynard has given to the farmers of the state some valuable instruction through the bulletins of the Hatch Experiment Station of the Massachusetts Agricultural College. The experiments that have been carried on in his department being especially valuable to market gardeners and fruit growers.

Geo. H. Snow is farming in Leominster, Mass.

'73.

W. S. Leland is an officer in the Massachusetts Reformatory, at Concord.

James B. Renshaw, B. D., is pastor of the Congregational church at Plainview, Wabasha Co., Minn.

Seth S. Warner is traveling salesman and agent for the Bowker Fertilizer Co. His headquarters are at Northampton, where he has quite an extensive local trade, being also agent for agricultural implements.

Charles Wellington, Ph. D., is very comfortably located in his new residence, it being about the finest in town.

'74.

J. A. Hobbs is special agent, Omaha Loan and Trust Company, in Bloomington, Neb.

E. H. Libby is editor and publisher of *The American Garden*, 10 Spruce St., New York city, N. Y.

Edward E. Woodman of E. & C. Woodman, florists, Danvers, Mass.

Frank S. Smith is a woolen manufacturer, Albany Woolen Mills, Albany, Wis.

'75.

Joseph F. Barrett, travelling salesman, Bowker Fertilizer Co. Residence, 29 Beaver St., New York city, N. Y.

William P. Brooks, formerly of the Imperial College of Agriculture of Japan, began his duties as professor of agriculture at M. A. C., Jan. 1st, '89. He is doing excellent work in improving the farm.

Madison Bunker, D. V. S., is a veterinary surgeon at Newton, Mass.

The firm of Clark & Carruth has dissolved, H. S. Carruth retiring, and is now looking after his real estate interests in Ashmont, Mass.

Zenas Young Clark died of Bright's disease at his home in Amherst, Mass., June 4th, '89.

A. A. Southwick is farm superintendent at the State Lunatic Asylum, Taunton, Mass.

G. M. Miles is a stock raiser in Miles City, Mont.

'76.

Hiram Kendall, the manufacturer of the famous "soapine," gives the prizes for the Kendall prize speaking as usual.

C. W. McConnell is a successful dentist; office, 170 Tremont St., Boston, Mass.

W. A. MacLeod, patent solicitor, 60 Devonshire St., Boston. Has kindly donated a lifting machine to the college gym.

George A. Parker, Halifax, Mass., landscape gardener for the Old Colony R. R.

Thomas E. Smith manufactures toys at West Chesterfield, Mass.

'77.

David H. Benson, chemist and superintendent of of Bradley Fertilizer Company's works at North Weymouth.

Geo. E. Nye is with G. F. Swift & Co., Union Stock yard, Chicago.

'78.

Arthur A. Brigham has the position vacated by Prof. Brooks, as professor of agriculture, at the Imperial College of Agriculture, at Sapporo, Japan.

C. S. Howe, professor of mathematics, at Butchel college, Akron, Ohio.

C. O. Lovell, photographer at Northampton, was '89's class photographer.

H. E. Stockbridge has been director of the Agricultural Experiment Station of Purdue University since his return from Japan last winter.

John H. Washburn is pursuing his studies at Göttingen, Germany.

'79.

R. S. Dickinson is farming in Columbus, Neb.

S. B. Green, horticulturist, Experiment Station of the College of Agriculture, University of Minnesota, St. Anthony Park, Minn.

W. A. Sherman, M. D., D. V. S., veterinary surgeon, Lowell, Mass.

Roscoe W. Swan, physician, Worcester, Mass. Office, 32 Pleasant St.

'80.

A. L. Fowler is a civil engineer at San Domingo, island of San Domingo.

W. C. Parker is about to be admitted to the Suffolk county bar.

Charles M. McQueen is president of the Progressive Publishing Co., Chicago, Ill.

'81.

C. L. Flint, of the firm of Dole & Flint, at 25 Congress St., Boston, Mass.

J. L. Hills, chemist, Vermont State Agricultural Experiment Station, Burlington, Vt.

Elmer D. Howe, farmer, Marlboro, Mass., is secretary of the State Grange.

Austin Peters, D. V. S., veterinarian to Massachusetts Society for the Promotion of Agriculture.

C. D. Warner continues as professor of mathematics in M. A. C., and also has charge of the meteorological department of the Hatch Experiment Station.

'82.

James W. Cooper, druggist, in Plymouth, Mass.

J. A. Cutter, M. D., physician in New York city.

Morris B. Kingman is doing well as florist in Amherst.

James B. Paige has quite an extensive veterinary practice in Northampton.

C. S. Plumb, Knoxville, Tenn., professor of agriculture and assistant director in charge of field and feeding experiments, Agricultural Experiment Station of the University of Tennessee.

A. F. Shiverick, chemist and assistant manager Pacific Guano Co.'s works, Wood's Holl, Mass.

W. E. Stone is chemist of the Agricultural Experiment Station of the University of Tennesee, at Knoxville.

L. R. Taft, professor of horticulture at Michigan Agricultural College.

John E. Wilder, wholesale leather dealer, Wilder & Co., 179 Lake St., Chicago, Ill.

J. L. Windsor, superintendent Auburn City Railway Co., Auburn, N. Y.

'83.

S. C. Bagley is a cigar packer for the Boston Co-operative Association.

E. A. Bishop is superintendent of the agricultural department of Talladega college, Alabama.

J. B. Lindsey sails the last of July for Germany, where he will pursue his studies in chemistry.

C. W. Minott, horticulturist at the Vermont State Experiment Station.

D. O. Nourse is horticulturist at the Virginia Agricultural Experiment Station, at Blacksburg, Va.

Charles H. Preston continues as chemist for state analyst, 161 Tremont St., Boston.

The engagement of H. J. Wheeler, student in Göttingen, Germany, and Fraulein Frida Ruprecht, is announced.

'84.

C. Hermes is farming at O'Bannon Station, Jefferson Co., Kentucky.

H. D. Holland is in the hardware business at Amherst, Mass.

E. A. Jones, farming at Logan Station, Philadelphia, Pa.

Llewellyn Smith, travelling salesman for Bowker Fertilizer Company.

'85.

E. W. Allen is continuing his studies in chemistry at Göttingen, Germany.

C. W. Brown, farmer, Temple, N. H.

Joel E. Goldthwait has recently received an appointment to the Mass. General Hospital at Boston. During the past year he has served as surgeon at the Children's Hospital, Boston.

H. Howell, farmer, Monroe, Orange Co., N. Y.

C. S. Phelps, vice-director Experiment Station, Storrs Agricultural School, Mansfield, Conn.

I. N. Taylor, with Thomson & Houston Electric company; now in California.

'86.

W. Ayres is in the sieve manufacturing business at Oakham, Mass.

D. F. Carpenter has been teaching the past year in Milbury, Mass.

Richard F. Duncan and Miss Collyr were united in marriage June 5th, '89, at Albany, N. Y. Mr. Duncan has lately graduated from the Albany medical college, and will settle in Poughkeepsie, N. Y.

W. A. Eaton is with E. B. Wood & Co. as expresss agent, Omaha, Neb.

C. F. W. Felt, civil engineer, Quamas, Sonora, Mexico.

R. B. Mackintosh is superintendent of J. B. Thomas' wool washing establishment, Peabody, Mass.

K. Sanborn is in Riverside, Cal.

'87.

E. W. Barrett has been teaching in Agawam, Mass., for the past year.

Wm. H. Caldwell and Miss Jessie A. Rice of North Hadley were married Dec. 25, '88. They reside in State College, Center County, Pa. Mr. Caldwell is assistant agriculturist, Pennsylvania State College Agricultural Experiment Station.

F. B. Carpenter is assistant chemist at the North Carolina Experiment Station, at Raleigh, N. C.

W. E. Chase is still in Redlands, San Bernardino County, Cal.

Fred A. Davis is a student in the Harvard Medical College.

C. W. Fisherdick is a law student in Lincoln, Neb.

E. R. Flint continues as assistant chemist at State Experiment Station, Amherst, Mass.

F. H. Fowler is clerk to Secretary of the State Board of Agriculture, Commonwealth Building, Boston.

Charles L. Marshall continues as market gardener in Lowell, Mass.

C. S. Howe is farming in Marlborough, Mass.

J. M. Marsh is salesman for G. E. Marsh, manufacturer of Good Will soap.

J. C. Osterhout is proprietor of Ingalls medical company, patent medicine manufacturers, Lowell, Mass.

E. F. Richardson is a farmer at Millis, Mass.

H. N. W. Rideout is season ticket agent, B. & P. R. R., Boston, Mass.

'88.

E. H. Belden is at Thomson & Houston's Electrical Works, Lynn, Mass.

H. C. Bliss, is travelling salesman for Bliss Bros., jewelry manufacturers, Attleboro, Mass.

Frederick K. Brooks and Miss Abbie I. Nelson were united in the bonds of matrimony in East Kingston, N. H., June 4, '89. Mr. and Mrs. Brooks will reside in Haverhill, Mass.

F. S. Cooley is assistant agriculturist of the Hatch Experiment Station of the Massachusetts Agricultural College.

S. H. Field is farming in North Hatfield.

F. H. Foster is pursuing a course of music at the Boston Conservatory of Music.

A. I. Hayward is assistant agriculturist at the Maryland Experiment Station.

J. E. Holt is learning the butter making trade at the Amherst Creamery.

L. F. Kinney began his duties March 1, as horticulturist at the Rhode Island Experiment Station.

E. E. Knapp is assistant chemist at the State Agricultural Experiment Station, Amherst, Mass.

Y. Mishima has returned from Japan and is continuing his studies in agriculture at Cornell University.

Robt. B. Moore is assistant chemist at the State Agricultural Experiment Station at Amherst.

Geo. E. Newman, market gardener, Newbury, Mass.

F. F. Noyes, expert, Thomson & Houston Electrical Company, 620 Atlantic Avenue, Boston, railway department; at present in charge of the construction of an electrical street railway in Newport, R. I.

IN MEMORIAM.

CHARLES L. FLINT, M. A., LL. D., DIED FEBRUARY, 26, 1889.

He was the fourth president of the college, holding the position from 1879-80; was also secretary of the college from 1863-85.

Zenos Young Clark died at the residence of Mrs. Prof. Clark, his mother, last Tuesday evening, after a protracted illness caused by Bright's disease complicated with a heart trouble. He was the son of Prof. Henry James Clark, professor of comparative anatomy and veterinary science at the Agricultural college from 1871 till his death, which occurred July 1, 1873; born May 24, 1855, at Boston, studied in the preparatory department of the Kentucky university at Lexington, Ky., and graduated at the Massachusetts Agricultural college in 1875. He was draughtsman in U. S. surveyor general's office in California, 1875-79, and also taught those years in the public schools and as assistant instructor in natural history at the University of California. In 1877 he delivered a course of lectures on microscopic Zoölogy before the San Francisco Microscopical society, and in 1879 pursued a course of scientific study at Leipsig, Germany. Since 1880 he has resided in California and Massachusetts, his health being very poor much of the time, and during these later years, articles have frequently appeared in leading magazines and publications on scientific subjects.

The class of 1882 is called upon to mourn the loss of Joseph Howard, who died suddenly of pneumonia at his ranch in Minnesela, Southwestern Dakota, on Feb. 13. Mr. Howard's death was peculiarly sad, as his wife was in Springfield with her three months' old baby which he had never seen. This is the second death in the class.

Among noted non-graduates deceased are:—Samuel Smith Garrigues, Ph. D., inspector of state salines, at Lansing, Mich., and George Endicott, E. M., formerly of the aqueduct commission of New York City.

A. G. K.
1868.

The Cycle.

SUPPLEMENT.

M. A. C.
1889.

COMMENCEMENT EXERCISES.

Rev. C. S. Walker preached the baccalaureate sermon before the graduating class, Sunday morning, from the text in Acts xx: 35, "It is more blessed to give than to receive." He dwelt on the modern evils of materialism and socialism. Those who have rendered unto God the things which are God's have never failed to give unto the state that which was due. This new type of the Christian citizen is everywhere recognized by the three characteristic traits—faith in God, private morality and efficient and faithful service to the state, rendered irrespective of what he may or may not receive from the state. This was followed by the customary address to the graduating class.

In the evening came the address before the Young Men's Christian Association. The meeting was opened with prayer by Rev. Wm. F. Warren, president of the Boston University, and the speaker of the evening. The discourse opened with an account of a Bible-class. Its leader was no ordinary man. In the course of their studies this verse was met: "This is a faithful saying and worthy of all acceptation that Christ Jesus came into the world to save sinners." What was necessary for salvation and how did Christ meet this need, was the question which the teacher gave to five representative persons of the class. By the journalist the question could be answered only by considering the condition of the world when Christ came. He showed that what the world needed was a teacher sent from God. The school-master, accustomed to form character, saw the need of a perfect example. The world needed stimulating. An ex-governor answered as one used to execute law. Since man had broken the moral law, a God of justice must inflict the penalty. But if any other course would more effectually restore the criminal to loyalty, then God not only may but is bound to make the substitution. Viewing it from the judicial standpoint, the judge saw that this substitution must satisfy the immutable and eternal justice of God's nature. What Christ did was to give that satisfaction. Lastly, came a saintly woman of the class. To her Christ was not a fresh herald of light, not an example, not a remodeler, not a self-offered sacrifice, but the lord of life. Our redemption was effected not by Christ's death but by his life. Christ reunited man to God, and this life can be kept only by abiding in Christ.

In concluding the speaker summed up as follows: The Bible-class is the church and the wise teacher is the Holy Spirit. The speakers are the church fathers and theologians. The great lesson of the teacher is earnestness, humanity, charity, hope and love.

At the chapel exercises on Monday, President Warren of Boston University addressed the members of the Senior class, striving, in the course of his remarks to give some understanding of the fundamental ideas underlying the workings of Universities in general and of Boston University in particular.

This was followed by President Goodell's address to the graduating class.

GENTLEMEN OF THE SENIOR CLASS:—The day so ardently looked forward to by you, has come, and the moment when you, too, will leave us, to go out into the busy world to play your part, is at hand. The four years spent here have been but the preparation, and now only, do you really commence your work. The ground has been prepared, the seed sown, the tender blades are springing, but on *you* depends the harvest. As the moment of parting approaches and we watch your exultant hearts as you feel the throb and pulse of life, we cannot but exult with you and rejoice, for our hearts are stirred and beat responsive to your own. The world is large—the lists are open, the prizes noble. Enter in and possess them.

The Roman gladiators as they entered the deadly arena, drew up before their Cæsar and pronounced the solemn words, "We about to die, salute you." It is far more fitting that you should cry, "We about to live, salute you." For the race is set for you. In you are centered the hopes of the future and you will take up the work that we lay down. There can be no shirking of responsibility. On each and every one of you a separate duty is imposed, and no one can perform it for you. You, and you alone, must do it. There is no cessation, 'For all life is strife, and until the limit of man's power of achievement, and energy of thought is reached, there can be no rest.'

Of the late President Andrews it was said:—"He came bringing neither wealth, titles, authority

nor the prestige of high rank: his capital was principles, ideas, character; his outfit that of a Christian teacher; his commission, the diploma of his college." What a capital for a man to draw on! *Principles*, *ideas*, *character*. Without the first, there cannot be the last, and strengthened by the second, the man possessed of all three becomes a power for good which thought can withstand. Thank God! the present age requires no such confessions of faith as were furnished by the sainted martyrs of old. No more Cobhams praying for their executioners amid the torments of the flames. No more Jamie Sawyers smiling amid the agonies of the rack and thanking God for the faith that was in them. The age does not require this, but you will be put to tests of principle which will shake the very foundations of your strength. You will be called upon to deal with great moral questions, to decide which, will require all the strength of character and principle at your command, and the scorn of the world will be almost as hard to bear as the torture of the rack or stake.

And when the hour of trial comes, as come it will, our constant prayer will be that you may acquit yourselves like men—large-hearted, firm-souled, Christian men. Be this, then, our parting word to you—this, the lesson gathered from our own experience—"Be men!"

"A time like this demands
Strong minds, great hearts, true faith and ready hands;
Men whom the lust of office does not kill.
Men whom the spoils of office cannot buy,
Men who possess opinions and a will,
Men who have honor—men who will not lie,
Tall men, sun-crowned, who live above the fog,
In public duty and in private thinking."

The Kendall Prize Speaking took place Monday evening, at 8 P. M. The speakers and their subjects were as follows: *Freshmen*—H. F. Stone, The Fall of Pemberton Mill; E. T. Clark, Toussaint L'Ouverture; C. A. Magill, The Patriot and the Traitor; R. P. Davidson, Heroism of the Age. *Sophomores*—W. W. Gay, The Creeds of the Bells; A. G. Eames, The Chariot Race; W. A. Brown, Justice to Robert E. Lee; L. F. Horner, The Slave of Boston. The judges were James Draper, Sylvester Stockbridge and C. S. Phelps.'85. Very acceptable music was furnished by the college quartette.

The D. G. K. held its 21st annual banquet on Monday evening. Immediately after the Kendall Prize Speaking a business meeting was held in the chapter hall, after which all adjourned to the Amherst House where supper was awaiting them. After the "inner man" had been satisfied some time was pleasantly spent in music, toasts, jokes, etc. Among the alumni present were representatives from several classes. At a somewhat early hour the assembly broke up, all feeling that the occasion had been a profitable and enjoyable one.

The Amherst Chapter of the Q. T. V. Fraternity held a banquet in the Chapter hall immediately after the prize speaking. Among the Alumni present was Lemuel LeBaron Holmes, '72, of New Bedford, one of the charter members of the Fraternity. The Brothers participated in a very enjoyable time.

The Pi Chapter of the Phi Sigma Kappa Fraternity held an enjoyable reunion Monday evening; and although many of the old familiar faces were missed, still quite a number were present to fill their places. It was voted to take action upon the death of Xenos Y. Clark, and his classmates, Messrs. J. F. Barrett, Prof. W. P. Brooks, and Rev. Henry Hague were appointed a committee to draw up the proper resolutions.

The Shakesperian Club had a very pleasant reunion at their rooms last evening. Quite a large number of alumni were present, among whom were Messrs. Minot and Lindsey, '83. At eleven o'clock the club sat down to a bountiful repast which was thoroughly enjoyed. After the supper numerous toasts were proposed by the able toastmaster, Mr. Mossman, and were responded to in a pleasing manner. The tables were then cleared away and the remaining hours pleasantly spent in conversation and music. The members dispersed at a late hour, after having thoroughly enjoyed the exercises of the evening.

The exercises of commencement week were not so rushed as the past year, owing to another day being added.

The prize speaking was very pleasant, and the Church Bells will be long remembered by all that heard them. All the speakers did credit to themselves and to the old M. A. C. Music was rendered very finely by Messrs. Hartwell, Tuttle, Belden and Woodbury. Many that heard the last selection rendered by the quartette on Monday evening could not forget the piece, and so many of those attending the President's reception were obliged to adjourn to the old chapel where they could dance with their "Dearest Maiden."

Tuesday morning at 8.30 A. M., the Senior class had their examination in agriculture for the Grinnell prizes; this examination lasted till nearly drill time.

At 2 P. M. the Trustees held their annual meeting, which lasted all the afternoon, and we hope much business was transacted for the improvement and advancement of the college.

The Alumni Association held their annual meeting in the old chapel, but the attendance was quite small. Those present decided something ought to be done in order to make the meetings more interesting and to bring a larger number of the Alumni back to the halls of M. A. C. each year. The executive committee were instructed to make arrangements for an Alumni dinner the coming year, and it is to be hoped that as many as possible will come back with their families and friends. The following officers were elected:

President, Hiram Kendall, '76.
Vice-President, William Wheeler, '71.
Secretary, Samuel T. Maynard, '72.
Treasurer. Clarence D. Warner, '81.
Auditor, Robert B. Morse, '88.
Executive Committee, C. E. Beach, '82.
E. A. Ellsworth, '71.

At 4.30 the drill began, the cadets doing very nicely in battalion and dress parade. The marching and manual were executed in fine style under Capt. J. R. Blair. This drill was followed by saber exercise under First-Lieut. and Adj. H. E. Woodbury. Mortar drill with firings under Capt. A. M. Nourse of Co. C, and artillery drill with manoeuvers and firings, under Capt. B. L. Hartwell, Co. B. All of the drilling was excellent, and showed the thorough instruction of the commandant and instructor, Lieut. Geo. E. Sage, whom we lose this June.

In the evening the President's reception was very largely attended by the graduating class and their friends; quite a number of the Trustees and Alumni were present, also many invited guests. All present enjoyed the evening very much. Pres. and Mrs. Goodell's receptions are always enjoyed by those who attend.

The graduating exercises occurred this morning at 10 A. M. The speakers and their subjects were as follows:

Arthur Davis Copeland "Influence of College Life;" Charles Stoughton Crocker, "Influence of New England Agriculture;" Franklin Ware Davis, "The Future of Agriculture in the Commonwealth;" Burt Laws Hartwell, "Choosing an Occupation;" Dwight Lauson Hubbard, "Military Education;" Arthur Merriam Nourse, "History of Agriculture in New England;" Charles Albion Whitney, "Evolution of Agriculture;" Herbert Elwell Woodbury, "Moral Elements of Success."

The degrees were conferred by Pres. Goodell, the Governor being unable to be present.

BATTALION OFFICERS.

The following is the list of officers for the Battalion for the coming year:

COMMANDANT AND INSTRUCTOR.
(*Rumored to be Lieut. Totten.*)
COMMISSIONED STAFF.
First Lieutenant and Adjutant, A. N. Stowe.
First Lieutenant and Quartermaster, John S. West.
Sergeant-Major, Allen M. Belden.
Quartermaster-Sergeant, Willard W. Gay.

COMPANY A.
Officers.
Captain, David Barry.
First Lieut., J. M. Herrero.
Second Lieut., A. C. McCloud.
First Sergeant, M. A. Carpenter.
Duty Sergeant, W. A. Brown.
Corporal, C. A. Magill.

COMPANY B.
Captain, H. L. Russell.
First Lieut., S. B. Simons.
Second Lieut., F. W. Mossman.
First Sergeant. M. Ruggles.
Duty Sergeant, H. N. Legate.
Coporal, G. B. Willard.

COMPANY C.
Captain, T. P. Felton.
First Lieut., F. O. Williams.
Second Lieut., F. L. Taylor.
First Sergeant, H. F. Tuttle.
Duty Sergeant, W. C. Paige.
Corporal, R. P. Davidson.

Freshman night has come and gone, and with it the usual amount of excitement. Being afraid of losing the cannon the Freshmen guarded them all the week previous. This afforded good opportunity for the Sophomores which they did not fail to avail themselves of, as was seen by the Freshmen being called out by a false alarm nearly every night, thus allowing them but little sleep. The Juniors, thinking it would assist them in guarding the cannon while the Freshmen were at supper, brought out the hose, but after both Juniors and Sophomores had been thoroughly drenched it was abandoned. In the afternoon an attempt was made to spike the cannon, but the irons used being too small only one was spiked. The Freshmen had a few fireworks and a set piece with the figure of "'92" which they said was very beautiful. About three o'clock the Freshmen came around the dormitories, the Sophomores having turned in some time before, but after making noise enough to awake most of them, they too decided to crawl in, where most were found a few hours later by Lieut. while inspecting rooms.